

FALLACY

THE COUNTERFEIT OF ARGUMENT



W. WARD FEARNSIDE and WILLIAM B. HOLTHERR

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WILLIAM B. HOLTER

It would be a very good thing if every trick could receive some short and obviously appropriate name, so that when a man used this or that particular trick, he could at once be reproved for it.
—Schopenhauer

Dedicated to
HELEN MARGARET HOLTER
ALICE WARD FEARNSIDE

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INTRODUCTION

The famous pessimist Schopenhauer, in "The Art of Controversy," turns an experienced eye on "the art of getting the best of it in a dispute. He allows that "unquestionably the safest plan is to be in the right to begin with," but sarcastically adds that "this in itself is not enough in the existing disposition of mankind, and, on the other hand, with the weakness of the human intellect, it is not altogether necessary."

It seems doubtful that the level of public discussion has much improved in our own day. Cogency, to be sure, is admired in the scientific laboratories, just as coherence and sensitivity are encouraged amongst our mathematicians and poets. In the committee rooms of Congress, in the editorials of the chain newspapers, on radio, TV, and billboards - in all of the noise and distraction in which we live our lives, only a child or a saint could expect truth to prevail simply because it is true. Truth has a chance when Noise and Distraction are on her side; otherwise she may be overcome. And these two can and do daily prevail without her or against her.

The triumph of rhetoric is like the spread of a virus infection. When an epidemic spreads through an area, it is said to prevail there, and local measures may be taken. But to say it prevails does not mean that everyone is infected. Some persons escape infection; others are immune. It is not necessary to labor the analogy in order to show that it would be a good idea if the community could somehow develop a serum against some forms of persuasion.

Few can hope to become immune to all the tricks of persuasion since, like viruses, there are too many of them. People are daily exposed to appeals to blind faith, self interest, fear, prejudice, fancy. This book cannot discuss persuasion in all its variety and complexity, but it can attempt to describe and illustrate some of the most dangerous strains.

Logic is the defense against trickery. The kinds of argument with which logic deals are the reasonable ones. Mistakes are possible, even frequent, in applying the forms of logical argument, and these mistakes are regarded as fallacies, many of them having been noted as early as Aristotle. We shall wish to guard against them. But the most common fallacies today are of a very different sort. It is a small comfort to know that an argument is entirely logical, that it validly derives its conclusion from its premises, and that all the rules of the syllogism, or whatever, are observed to a nicety, if it turns out that the premises are frauds, snares, delusions. There are brilliant tricks for getting people to accept all sorts of false premises as true (some of these tricks have been spotted since the time of ancient Greece), and these tricks of argument are so prevalent that even when people realize that something is being pulled on them, they tend to let it pass.

Arguments are a highly complicated human activity and cannot be successfully studied in a sort of vacuum, as if the language uttered and answered itself. Like Schopenhauer, we have just had some hard words for the general run of discussion. This discussion at least takes place in a world of activity and interest, is directed toward goals, and, if at all successful, takes shrewd account of human nature. It is an oversimplification to suggest a clear-cut opposition between argument on one side and persuasion on the other. The most blatant singing commercial usually contains some argument, some alleging of reasons and drawing of conclusions: buy this because it's so good. That the argument is not spelled out, that the audience has to supply the premises, generously allow a connection between them and the evidence cited, and then still accept the conclusion more on faith than reason - all this does not much matter. Even in logic books the arguments are seldom spelled out, except in the examples. After all, no one is overtaxed by the unstated premise in the argument "This man cannot vote since he is unable to read English." The argument runs:

All voters must be able to read English, (unstated)
This man is unable to read English.
Therefore, this man is not a voter.

(This form of argument is the syllogism, first described by Aristotle; he also noted the fact that in ordinary discussion one of the premises, or even the conclusion, is often assumed rather than expressly stated. Where a premise or the conclusion is unstated he called the argument an enthymeme. The unstated portion always can be supplied so that the enthymeme is expanded into a syllogism as was done here.)

One is not troubled by the ellipsis, that is, by the omission of words expressing an idea that can be taken for granted. Nor does it matter that speakers employ the embellishments, the metaphors, the richness and complexity of the living language. Ordinary speech, arising in a live situation, is not designed to satisfy the formulas of logicians. What does matter is the taking advantage of ellipsis, complexity, and verbal display to deceive and obfuscate. In this book we intend to take a look at some distinguishable varieties of fallacious argument, so that we can recognize them in the speech around us and avoid using them ourselves.

We have chosen to examine chiefly the notorious fallacies. In our descriptions we try to make it clear what the particular case before us is, and, in the examples, we try to illustrate one particular fallacy at a time, without entirely sterilizing the sample. But fallacies reinforce each other, and in a weak argument there is apt to be more than one thing wrong. In almost all cases the examples are derived from the world we live in. They are representative of actual discussion, so they are often disguised for obvious reasons, though perhaps not out of all recognition, and trimmed down to size.

The word "fallacy" is sometimes used as a synonym for any kind of position that is false or deceptive, and sometimes it is applied in a more narrow sense to a faulty process of reasoning or to tricky or specious persuasions. We will use "fallacy" in the latter sense so that one may say a fallacy occurs where a discussion claims to conform to the rules of sound argument but, in fact, fails to do so.

We classify fallacies under three heads. There is nothing compelling about the arrangement, and many individual fallacies could be placed as well under one heading as another. The divisions are: Part I. *Material Fallacies*, Part II. *Psychological Fallacies*, Part III. *Logical Fallacies*.

This arrangement can be illustrated by a figurative analogy. Suppose we compare argument to a manufacturing process which uses a machine, an operator, and raw materials. If the materials are up to standard, the operator efficient, and the machine running smoothly, the finished product will probably pass inspection. However, three kinds of things can go wrong. The materials can be below standard or poorly prepared. The operator can make a mistake - get sleepy or be distracted and turn the wrong knob. And the machine itself can break down or malfunction. In any of these three cases, the product will probably not pass inspection. If the trouble lies with the material, we call it *material*; if with the operator, we call it *psychological*; if with the machine, then *logical*. The analogy is crude, but it gives an idea of the emphasis in each section. Under material fallacies we take up faulty generalization and other contaminations of the premises. Under the psychological heading we discuss such common fallacies as emotive language. The processes of logic are rather like those of a machine, and the logical fallacies show a clear malfunctioning of forms designed to go smoothly and produce valid arguments.

We have not by any means exhausted all the things that can go wrong in an argument. What we aim to do is to produce a description of the most notorious fallacies, with some additions that today seem to deserve special notice, and to illustrate them fully.

PART I: MATERIAL FALLACIES

In terms of the analogy of a manufacturing process (described in the introduction), the final section of this book will examine the malfunctioning of the formal machinery of argument, where the product is so poorly fitted together that the conclusion dangles unsupported in reason. The second source of error is the emotional tricks and appeals which distract from the process of reasonable discussion and tempt disputants to hold all sorts of untruths and half-truths to be self-evident. These, the vulgar sources of error and befuddlement, the claptrap of argument, will have their turn in the next section. There remain the errors that come from raw material of poor quality. When the material is bad, it can be small wonder if the product is also unsatisfactory, however carefully processed, however careful the manufacturer. This failure in the materials is described in the present section, where we take up some of the more common ways in which the materials of argument fall below standard.

To find good standards, the best thing to do is to examine a model product. The field of science abounds in clear examples of sound reasoning. The very model of a convincing argument built on reliable evidence is a scientific argument. Let us look at these model arguments, the demonstrations of science, and we may see more clearly how some other arguments fall short.

The various physical sciences establish their general laws by working backwards, as it were, from observational sentences, sentences known to be true in experience. The laws can be considered as premises that lead to the observations as conclusions: if the laws are true, the observations have to be true, too. This is the backwards effect, since, after all, it is the observations that are known to be true - the laws are inferred from them. But in the demonstrations, the arguments in scientific writing, the observations are "derived" from the laws by a vigorous process of logical or mathematical proof.

The laws are so designed as to be perfectly inclusive; that is, no known observations contradict them. Moreover, no other plausible premises are known from which the observations could follow. The laws are economically drafted: each has as wide a scope as the facts allow, and two laws never stand where one would do. Finally, all scientific laws are consistent with one another.

In all cases new observations can be predicted, not mere duplications of previous data (such as laboratory experiments in school), but actually new experiments. When Einstein published his theory, in addition to taking into account all relevant past observations in a way no other theory had succeeded in doing, he was also able to predict further observations that would be logical consequences of the laws he had discovered. The observations were made as soon as feasible, for example those connected with the bending of light rays. They "confirmed" the laws, since they could not have been predicted as a consequence of any other intelligible hypothesis.

Why, in their arguments, do the scientists treat the laws as "premises"? Why, that is, do they want to express the observations as conclusions derivable from the laws? They want to know exactly where they stand. If only one predicted observation should contradict the "law," then the latter would become a discarded hypothesis. Moreover, though the observations are derived from the law, they do not prove the law true in turn, no matter how numerous they are. The so-called laws remain hypotheses.

What would it mean to "prove" a law? Until the time of David Hume it had been thought that there was a "necessary connection" between the law and the observations, the sort of relation that there is in geometry between the theorem and the postulates and axioms. Hume showed that in the case of empirical laws, one can always imagine the sun rising in the west, gravitation working in reverse, water freezing at 100°C. But where there is a necessary connection, the contrary case is inconceivable. I cannot conceive of a prime number between 7 and 11. I cannot conceive of my being both present and absent at the same time, in the literal sense of these words. I can say these things, but I cannot say them without contradiction. I can say that 8, or 9, or 10 is a prime number, but I cannot say so and mean by "prime number" or by "8," "9," "10" what mathematicians mean by them. On the other hand, there is no logical contradiction at all in speaking of water running uphill.

There is no mathematical certainty, but the probability that the laws of science hold is enormous. They may be regarded as generalizations with no exceptions. Moreover, these generalizations are much stronger than the sort of naive generalizations traditionally discussed by philosophers of science, such as "All crows are black," or J. S. Mill's "All hyacinths are blue." The generalizations of science never stand isolated. Rather, they are interwoven into more and more complex statements, like a web drawn together at certain points. The web endures as a whole, the strength of each strand contributing to the strength of the others. The "induction" for a generalization of physical science is thus not a simple leap from positive instances, free from the occurrence of a negative instance, to an "all" statement. It is a moving from strand to strand in a tightly woven lattice. Everything known about the world, or nearly everything, supports what is known about any small part of it.

Though there cannot be certainty that every occurrence will conform to the laws, throughout all time and space, there is still perfect certainty that every known instance is derivable from them and, moreover, that a counter instance can not occur if the laws are true. The absence of a counter or negative instance is a necessary condition for the truth of a given law. The presence of such an instance would be a sufficient condition for the falsification of the law. In this respect, it would seem that the given law is no better off than the generalization about hyacinths. Logically it is not, but practically it is, even apart from

the matter of cross-inference lattices just discussed. The experimental conditions are so well defined that scientists know exactly how to test the laws. This is to say, they characteristically know what experimental or observational procedures to set up for finding the negative instance if it has the remotest probability of occurring. They don't have to sit around waiting for it to show itself.

With the model of scientific law before us, what can we say about the principles and generalizations by which we must, in our every-day problems, attempt understanding and venture deeds?

A step-by-step comparison is hardly necessary. It is all too evident that ordinary life wisdom is a tissue of vague categories, where truth is relative to ignorance, which is vast, where procedures are clumsy and blind. Far from weaving a tight lattice of systematic investigations, individuals make isolated observations. Since man must understand so that he may move and act, he leaps to some hasty generalization and "induces" some broad principles from scraps of evidence.

The common man's hypotheses sometimes fail to survive their first test. As to the so-called laws, such as the laws of human conduct, they are often incapable of confirmation with the means at hand ("Democracy is the most efficient form of government," "A world state is the only check to world war"). Responsible persons wish to act on principle, so they affirm their generalizations on faith or pretend to believe in them while the crisis of action lasts.

This is the human predicament. It has been well expressed by I. A. Richards. (From *Practical Criticism*, New York: Harcourt, Brace & Company, 1929.)

There are subjects - mathematics, physics and the descriptive sciences supply some of them - which can be discussed in terms of verifiable fact and precise hypothesis. There are other subjects - the concrete affairs of commerce, law, organization, and police work - which can be handled by rule of thumb and generally accepted convention. But in between is the vast corpus of problems, assumptions, adumbrations, fictions, prejudices, tenets; the sphere of random belief and hopeful guesses; the whole world, in brief, of abstract opinion and disputation about matters of feeling. To this world belongs everything about which civilized man cares most.

It is not always the case, of course, that people must understand and act at once, getting on with the evidence at hand. Sometimes they can wait for better evidence and continue to gather it. Sometimes, when action is forced on them, they act well and meet with signal success. What a man can always do is act in humility. He can learn to regard his hypotheses as tentative aids to understanding, rather than as eternal principles or absolute dogmas. When the pressure of events forces a man to take sides, to do what he can, he should recognize that he is engaging in a trial-and-error process, which, though he fail, may still afford rich experience for future guidance.

Even in the "sphere of random beliefs and hopeful guesses," there are some reasons better than others. All of the materials out of which the common man builds his arguments may be far from scientific standards, but some are considerably further than others. There are many occasions of error in the gathering and arranging of the evidence from which to build arguments.

In an argument this evidence must be marshalled in a way to lead somewhere. Where it leads is called a "conclusion." Evidence cannot lead to a Conclusion unless it is carefully organized in cogent way, that is, unless it can be cast into the form called "premises." The premises not only must lead to a conclusion, but they must be true to the evidence also. Making sure that the premises are true to the evidence is a problem of meaning: premises must mean no more than the evidence supporting them. Moreover, they must be intelligible and clear, for the conclusion will be vague or haphazard if the premises are - you cannot get out more at the end of an argument than goes in at the beginning. Casting the evidence into the form of cogent premises, with the language clear and intelligible, is also a problem of meaning. The whole process, then, of setting up true premises for an argument is a matter of meaning, of what is called 'semantics.' There are two fairly distinct problems:

- a. is the evidence truly and fairly represented in the premises?
- b. are the premises which represent the evidence clear and intelligible?

A simple example may make these necessary distinctions clear. If one wished to make an argument to show that certain forms of advertising are good for the consumer as well as for the business man, he would want to be sure that the general propositions he was advancing as premises represented the facts as they are, and that the classification of the kinds of advertising treated was clear and consistent. Could he assert that all advertising must, say, appeal to some real need of the consumer? Is the distinction (b) between, say, prestige sponsorship of a symphony orchestra and direct product pushing clearly drawn and easily applicable?

We shall first treat the problems of stating the facts right, of correctly representing the known situation in the premises. Here occur the familiar fallacies of hasty generalization, post hoc arguments, faulty analogies. After treating of these and related fallacies, we shall turn to the problems of vague classifications, word magic, and the rest of the nightmare horde that haunt the semanticists.

TROUBLE WITH PROPOSITIONS

The premises of argument are embodied in propositions - sentences that set forth the claims made about the materials. Sometimes these propositions assert that certain conditions obtain. The conditions are well enough understood, but the claims made are exaggerated or unwarranted in some other way. Perhaps they are too broad - all fire engines I have ever seen are red, but I leave out the qualification ("I have ever seen") and simply state "All fire engines are red." Sometimes the relationships among the facts are misinterpreted - I eat lobster and have nightmares, so I announce as though it were a universal law: "Lobsters cause nightmares." If a speaker takes certain well understood precautions, he can avoid unwarranted claims in his premises.

In this section we assume that the materials are as well in hand as they are likely to be, or at least as is necessary for making responsible assertions about them. The troubles treated in this section, then, come from going beyond or counter in some way to the evidence. In the next section "Trouble with Constructions," the troubles are more subtle, since they are interferences encountered in the actual formation of the notions about the evidence, related together or otherwise modified in the propositions. For the present we assume that the constructions are suitably precise and that the problems come from their use in propositions, rather than from their formation in experience.

1 Faulty Generalizations

Unlike the scientist, the layman lacks techniques for testing generalizations. Laboratory instruments, trained technicians, controlled conditions - these are all missing. There is no system for testing a generalization through all the multiplicity and complexity of the probable cases. Consider a very ordinary instance: "No human act is truly disinterested. Every man's generosity has somewhere a core of selfishness in it. Every man wants to get something when he gives something, if only self-approval." The "truly" takes care perhaps of the anonymous benefactor and similar alleged cases of disinterested generosity, by defining them away. But in all the deviousness of human relations, what means are available for searching out this core of selfishness? The constructions seem serviceably clear, but where can the evidence be found? Could all agree on what the evidence for confirming or falsifying the generalization might be? For instance, can any one suggest a test case that would be crucial for exposing self-interest, if present, in an act of pronounced generosity - something like the crucial experiments of science?

These considerations have led skeptics to claim that in the business of daily life a principle of indifference operates. Many decisions are a gamble in which the dice can not be loaded, that is, in which there is not even a crooked way to anticipate the cast of fortune. And wagers, so to speak, are dictated by compulsive magical practices, mere habit, or wish-thinking. This is Richards' domain of random beliefs and hopeful guesses.

The facts fail to confirm the skeptical view of everyday thinking. Almost everybody who acts on principles and guides his present choices by his past experience meets in a thousand details of life with more successes than misfortunes. On the whole, intelligent people invest their money well, they order their human relationships pleasantly enough when they order them at all, they raise their children in mental and physical health. This cannot be all blind chance, balanced out by the bankrupts, the multiple-divorcees, and the heart-broken parents of delinquent juveniles. Disasters happen to very intelligent people, and sometimes "through their own fault." But by any common-sense standard of intelligence, they fall on them less often than on the uninformed and the unprincipled.

Information and principles, when expressed in language, take the form of generalizations. The language has a very limited number of ways to express generalizations. We usually have to say "all x is y" or "no x is y," or "most x is y" or "x somewhat resembles y" or some paraphrase of these. With increasing statistical and actuarial information, we are sometimes able to speak of the percentage of cases or the incidence of a trait. Sampling techniques guarantee to some extent an even distribution, so that the relatively small number of cases examined will provide reliable information about all the cases. Children from homes with an income i will become juvenile delinquents with a probability of p ." "X percentage of married couples owning their own homes will divorce as compared with y percentage of those who pay rent."

Though the body of statistical information is growing daily, most generalizations on which laymen must base their understanding of the world they live in cannot claim any such precision of meaning. "Only psychopaths have no loyalties." "Brain washing and psychological torture prove what the Inquisition failed to demonstrate, that every man has his breaking point." "Child psychology will probably never develop an adequate safeguard against sibling jealousy."

These and thousands of similar statements seem entirely meaningful - that is, they are true or false. They are sweeping; they are unprotected by sampling procedures or careful statistical sifting. Yet they or principles like them are indispensable in thinking about important problems.

The model of the statistical generalizations, nevertheless, throws light upon the nature of other generalizations. It is scarcely two generations since William James sent out the first known questionnaire (he wanted to find out if persons who had lost their legs felt that they had sensations in the missing members). In that brief period everybody has had many surprises as beliefs deriving from untested experience and "general knowledge" have tumbled over one after the other. The reflective man has learned a measure of caution.

He has also learned that when he says "all," "none," etc., he often means "almost all," "hardly any." In the realm of human behavior no (that is, hardly any) generalizations hold one hundred per cent. Even in medicine, a matter of chemistry and physiological structure, people occasionally recover from "incurable" diseases, walk around on fractures, and shoot themselves through the head without doing noticeable brain damage. As to common-sense beliefs in the psychological and cultural spheres, they remain tenuous to the point of being diaphanous.

Statistical findings suggest caution before placing confidence in universal statements. Sampling methods suggest extreme care in order to be representative. The refinement of questionnaire techniques suggests ways in which to ask questions so as not to influence the answers. The traditional "inductive" fallacies can be interpreted as infringements of rules justified by these procedures.

The positive criterion for testing a generalization is the literal truth of the proposition as stated. If the generalization claims "all," or "none," then one counter instance makes it false. "Finding the counter instance" is the great task of refutation in law courts, scientific journals, the learned controversies in philosophy, criticism, social science. It is also the most likely tool in the debates and discussions of every-day intelligent living.

Yet one must not pedantically carp at enthusiastic and sweeping statements which can be simply and plausibly recast without damage to a position. If a speaker says, "All power corrupts," he need not be rebuked. One can mentally add "by and large."

The two most common forms of faulty generalization are jumping to conclusions and selecting the cases. Let us take these up briefly and exemplify them.

(a) *Hasty Generalization*: "jumping to conclusions"

The fallacy of generalization from too few cases consists in drawing a general conclusion on the basis of an experience with particulars, which statistical science shows to be insufficient in view of the size of the unit examined, or, as pollsters say, the "population." Even where there is a lack of time or money to prepare a proper actuarial survey, there is no excuse for ignorance about the minimum size of the sample - the man who talks to a few people in his office and to his neighbors and then makes a bet on a presidential election deserves to lose the bet.

EXAMPLE	COMMENT
Peter is eating Jane's Frozen Peas when he breaks a tooth on a pebble hidden among them. He tells all who will listen never to buy another Jane's product.	Tired of hearing this complaint, Peter's wife points out that one bad experience with a box of peas does not constitute wide acquaintance with Jane's packaged products. It is not even a fair sample of Jane's Peas.
"Professor Ballast is insufferable, and I will have nothing to do with him. He struck his wife when she reminded him of his promise not to borrow more money."	It is easier than in the previous example to feel sympathy with this general conclusion, which likewise stems from a single instance. Sometimes behavior is revealing because it is so far from the norm that a single instance indicates a bent of character. Although it is true that more instances would provide a better foundation for judgment, in a life situation one would hardly await numerous examples of unpardonable conduct before one felt secure in the conclusion "This man is insufferable."
Consider the following proposition: "The proverbs of the language preserve generalizations that have stood the test of time. They embody the experience and wisdom of the race."	Several things are wrong here, but the present concern is primarily with insufficient cases. The speaker presumably refers to such expressions as "A stitch in time saves nine," and "A bad penny always returns." But proverbs often contradict each other: "Look before you leap," "He who hesitates is lost." Or, "Two's company, three's a crowd," "The more the merrier." Or, "Absence makes the heart grow fonder," "Out of sight, out of mind." Counter instances have shown that the generalization about "generalizations that have stood the test of time" is false.

A student of contemporary literature writes, "So-called science fiction is a waste of time. I have waded through nine novels and many short stories by the better known writers in science fiction, and I find that their plots are feeble, their characterizations implausible and the science in the fiction is fantastic and largely irrelevant to the action." In answer, the editor of a science fiction magazine points to two examples of well constructed novels in the field, which have had a deserved success.	The editor's argument, citing counter instances, is legitimate in testing the critic's unfavorable generalization. The generalization "All science fiction is bad writing" is exploded by pointing to one good story or novel. In the everyday use of language, people are not so strict. The critic here need not be interpreted as saying that all science fiction writing is bad. He is establishing a critical judgment and describing the genre as a whole. It is clearly a "waste of time," as he says, to read for hundreds of hours in order to find one or two good stories.
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(b) *Unrepresentative Generalization*

Though people in the ordinary case will not be able to sample a widespread population, in the manner of a Gallup poll, knowledge of sampling techniques ought to make them shy of regional, occupational, and other differences. Polling experience abundantly demonstrates that even a very extensive acquaintance with particulars does not warrant a universal conclusion unless the particulars enjoy a representative dispersion. If a minister should poll every member in a large metropolitan congregation of a certain church on, say, capital punishment, this will not enable him to predict with any assurance the division of opinion country-wide, even in the same religious denomination.

The extreme instance of unrepresentative dispersion of cases is the misrepresented selection. Many people have an impulse to suppress the counter instances: consciously or unconsciously they vitiate the evidence by selecting only a part of it. They look exclusively for evidence that will support an idea, with the result that they overlook the opposed evidence. The selection may take a more subtle form: no actual case is suppressed, but the sample is chosen to avoid damaging cases. Side-walk interviews held on prominent shopping streets are often of this sort. An investigation of the effectiveness of TV advertising could be made to yield decidedly different results, depending on whether the survey was made near a college campus or in an underprivileged part of town. Much cited in this connection is the *Literary Digest* poll which predicted the election of Landon over Roosevelt in 1936. An egregious error resulted from an inadequate sampling technique: in 1936, apparently, millions of Democrats could not afford a telephone, or had no time for questionnaires, or had not formed the middle-class "clerical habit" of answering them.

EXAMPLE	COMMENT
A famous historian writes: "Military coalitions usually fall apart before their objective is attained. So it was with the coalitions which opposed Louis XIV, Frederick the Great, and Napoleon I."	The writer is suppressing, one hopes unconsciously, evidence against his generalization. The academese "usually" does not let the good scholar escape the charge of giving a false generalization, unless he is prepared to show that an adequate number of instances justify the assertion "usually." To hedge against contradiction by employing without evidence "usually" or any like words is to make unjustified assertions. In this case, the exceptions to the statement are many - for instance, both Louis XIV and Napoleon I were ultimately defeated by coalitions that remained intact against them. Incidentally, on August 31, 1944, Hitler stated in a conference of his generals, "All the coalitions in history have disintegrated sooner or later. The only thing is to wait for the right moment, no matter how hard it is." Thus, in the hope that the allies would fall out among themselves before his defeat, Hitler justified prolonging World War II until battle raged in the streets of Berlin. One may conjecture that Hitler's generals would hardly have dared to subject his generalization to an impartial discussion, and that all present had reason to indulge in rationalization (see #25).
Professor Peter is talking to a colleague. "Engineering students generally study hard. I have three engineers taking my sophomore course, and they're all hard workers."	The professor should be allowed some leeway in expressing ideas in a casual conversation. At least, he is trying to cite confirmatory evidence for his opinions. The danger is that, having advanced an idea, he will look for cases from now on that confirm it, rather than examining a representative group of instances. Moreover, the number here is so far too small to permit any but the most hasty generalization.

<p>Overheard on a bus, "That Maud is illiterate. She says, 'I ain't got none' for 'I haven't got none.' "</p>	<p>That the correction is also "illiterate" is not the point of this example. The word "ain't" is a sort of shibboleth for the semi-educated; those who use it brand themselves as linguistically hopeless. For the better educated there are many other crucial cases, such as the use of "none" for "any." The interesting thing is the actual presence of such definite criteria. Consider the example of the professor who struck his wife (see #1). On the basis of this one act, people are ready to condemn Professor Ballast as being socially hopeless. No one asks if the act is representative. The question "Out of a thousand hours with his wife, how many does Professor Ballast spend striking her?" seems ridiculous. Similarly, people don't require to know how often a speaker says "ain't got" for "haven't got." One occurrence of certain traits is felt to be "representative" enough for the purpose of judgment. But care must be exercised in the extent of the judgment. A speaker who says "ain't" may expose himself as belonging to a certain linguistic group or as employing a certain dialect, but it does not follow that what he says in his idiom may not make excellent sense, or that his speech may not evidence candor and sense. As to men who strike their wives, whatever the provocation, they reveal a serious character fault, and they will be judged accordingly by their associates. Again, it does not follow that their character is all fault. Many men with dangerous tempers have been known to be generally kind, considerate, gentle. The problem, then, in these cases is not that the generalization is hasty or unrepresentative, but that the judgments based upon it may go beyond it. From "bad grammar" to "stupid speaker" is an easy but snobbish step. The leap from "bad temper" to "bad man" is unwarranted and uncharitable.</p>
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2 Faulty Causal Generalization

People ordinarily speak of one event causing another when the two events belong to two classes related according to the following rule: every event of the first class is closely followed in time by an event of the second class. Imagine two classes of events, say (1) the class of lightning flashes, and (2) the class of thunder claps. The rule implies that if lightning causes thunder, then every flash of lightning will be followed by a peal of thunder. It will be seen that the classes of events are constructed so that there is a paired relationship between members of the first class and members of the second. We know how to construct the first class, relative to the second, since we know how to put each member in a one-to-one correspondence with members of the second class. Do we know how to construct the second class relative to the first? Well, we know that there will be a member of the second class for every member of the first, but we don't know from the rule of construction whether or not there will be some members of the second class left over. In terms of lightning-followed-by-thunder, we know that every instance of lightning will cause thunder, but the rule doesn't tell us whether or not every instance of thunder has been caused by lightning; perhaps some other way of violently disturbing air masses can also cause thunder. Still, accepting the generalization "lightning causes thunder," we should not regard any atmospheric electrical display (say northern lights) as lightning unless it is followed by thunder.

Causal generalizations are not theoretically different from other sorts. Thus they are subject to the ordinary ills of generalization; they can be hasty and selective. Yet, the complexity of the causal relationship is such that errors here are more common and harder to detect.

Some of the complexity arises from the fact that very often there is a class of events when there is no evident class of causes. People develop high fevers, and fever seems a definite phenomenon. Automobile tires go flat, and flat tires are remarkably different in a recognizable way from serviceable, inflated tires. Since we start with a noticeable class of effects, it is a class of causes we wish to discover. In such cases a class of causes is constructed according to the pairing-off rule. It is well constructed if and only if every instance in it is followed in time by an instance of the class of effects. If every instance of a puncture is followed by an instance of flat tire, we can say that punctures cause flat tires. But the class of flat tires, though pretty evident to motorists, is still not so well constructed, considered as effects (of course, in its turn it is a cause of other effects). We don't know that every instance of a flat tire is paired off with a puncture. Maybe this present instance is paired off with a leaky valve.

Since most drivers have wide experience with flat tires, and tires are relatively simple man-made things, few are apt to make a false causal generalization about them. In more complex cases, the causal relationship may be obscured; though the class of effects is unmistakable, it is not well constructed relative to a class of causes. Fever, for instance, is caused by a wide range of infectious diseases; each instance of infection is neatly paired with an instance of fever. Thus the presence of fever is small help to a physician in diagnosis. As "diagnosis" means "ascertaining the cause of an illness," the physician needs a wider range of effects before he can distinguish between, say, a common cold and the onslaught of polio.

From these considerations it can be seen how the most important false generalizations about causes occur by taking the class of effects to be well constructed relative to causes. If by far the most frequent pairing-off of flat tires is with punctures, but still not all, generalizing from this factual base to the statement "Every flat tire is caused by a puncture," is obviously a false generalization. In this form, it would be recognized as one, inviting as it does reference to counter instances: "What about leaky valves?" The mistake is more likely to occur in a concealed form: "That tire must have a puncture." In such a case the false generalization is in a suppressed premise: "Every flat tire is caused by a puncture. That tire is a flat tire. Therefore, that tire must have a puncture." We have just seen that the class of effects is not necessarily well constructed, just because a class of causes is - in this instance punctures relative to flat tires.

It *may* be well constructed. The advance of physical science is marked by a progressive narrowing of the classes of effects so that after the pairing-off with the classes of causes, there will be no instances left over. If something comparable were feasible in medicine, doctors would not talk about fever, but about x-fever, y-fever, etc., so that the wide class could be replaced by smaller classes determined in such a way that each had its own unique class of causes, where each instance of one is paired with an instance of the other, with no remainder.

In the ordinary case, speakers are able to say that one thing is the cause of another only as a sort of convenience. They mean it is the cause with a high degree of probability. If someone should say that public ownership of electrical power in Southern California is the cause of the rapid growth of industry there, he presumably would accept the emendation "everything else being equal, such as available transportation, good labor market, etc., between Southern California and some other area." "The cause" here means "a cause selected because it is the important difference." Persons lacking scientific training quite naturally tend to understand "the cause" to mean what it says. When they do not know any other cause, they suppose that what usually happens always happens and argue with irrefutable logic from false premises to what may be a false conclusion.

EXAMPLE	COMMENT
Peter develops hay fever whenever exposed to golden-rod. He takes his family for a drive in the country but soon begins to sneeze and cough. "The goldenrod must have bloomed early this year," he exclaims, and turns the car towards home.	Peter's statement is an enthymeme. Expanded, his reason for cutting short the drive becomes "The cause of my hay fever is the presence of goldenrod. I now have hay fever. Therefore I am in the presence of goldenrod. Therefore, goldenrod must have bloomed early this year." Peter may be right. But other things may cause the symptoms of hay fever besides goldenrod, as people allergic to one thing are commonly allergic to several. It is wise to turn the car around; the only thing his family might question, if they feel like splitting hairs, is Peter's reasoning, not his action. The example, nevertheless, has its interest, as it shows the common belief that the class of effects is well constructed, simply because the class of causes is, so that one is entitled to make a strict conversion (see #42) from "Every instance of x is a cause of y" to "Every instance of y is an effect of x." This could be so only on the interpretation of "the cause of y is x" as "The only cause of y is x." In the case of hay fever and similar phenomena, this interpretation is almost certainly false.

<p>It is sometimes argued that the ultimate cause of war is human aggressiveness, and thus, as long as human beings are aggressive, there will be wars. Hence world peace organizations and disarmament programs are doomed to failure.</p>	<p>The word "ultimate" presumably means a cause behind the proximate causes. The cause of a murder victim's death may be injuries in the organs in the head, in turn caused by contact with the blade of an axe. But "the cause" here refers to the intent to kill on the part of the murderer. Similarly, World War I was touched off by the assassination of an archduke, but historians speak of economic, social, political factors as being causes, and the incident at Sarajevo as being the "occasion" of the ultimatums and mobilizations. Those who propose the above argument are saying that behind these economic and other causes there lies still another cause, which is the cause, namely, the aggressiveness of man. Western man is culturally aggressive, but there is no evidence for asserting this aggressiveness to be incurable. At least theoretically, world peace organizations, like national and civil institutions, could make it possible for communities to live in world harmony as they now so often do in neighborhood harmony. This is incidental. The real trouble with the argument is that it goes too far back in the causal chain. It is as if one should say "The cause of the axe murder is the frustration of the middle class." Many things are interrelated in a spreading causal nexus, but in law and common sense speakers limit their causal generalizations to as few classes as seem sufficient to explain the phenomena and thus to guide their conduct. One says, not that the cause of wars is human aggressiveness, but that a cause of economic and political conflict, which may or may not lead to war, is human aggressiveness. And sometimes, over-aggressiveness will lead to war even where there is no real opposition of interests. This pushing back of causes can go on indefinitely: the cause of war is the nursing habits of mothers - there is evidence that some aggressiveness may be explained as a result of putting small babies on a rigid feeding schedule!</p>
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3 Assuming the Cause: "post hoc reasoning"

The trouble with the cause arises from complexity in this construction of the classes. But there is a vulgar error in talking about causal relations which comes from a false generalization about causation itself. This error takes the form of supposing that because something follows something else it is caused by it. One feature that all paired constructions of causes and effects have in common is that the effects follow the causes. This is a necessary feature, but it is by no means a sufficient one for constructing the classes of causes. If it were sufficient, everything that preceded anything else could be regarded as a cause of it. Astrology would be science instead of superstition, since there are configurations of the heavenly bodies antecedent to every event in the world. My plucking a red rose yesterday would also be a cause of my nosebleed today. When the classes of events belong to the same realm of phenomena and are closely related in time, their connection seems more plausible. If the first event is political and so is the second, the propinquity may be very convincing. Many persons who put no stock in astrology would still nod amiably if someone should say, "The death of President Roosevelt caused the cold war."

The sufficient conditions for a well-constructed class of causes are similar to those for any well-constructed generalization - lots of representative cases and no counter instances. Putting the necessary and sufficient conditions together, we may say that one thing is a cause of another if and only if, in numerous and representative cases, every case of the one is followed by a case of the other.

Post hoc means "after this." The words refer to assuming without proof that a prior event explains a subsequent occurrence. The post hoc error is called "vulgar" since it is not only common but also ignorant. Magic, superstitions, old-wives tales, and political debate abound in instances of *post hoc*. The first example involves a special feature that deserves notice.

EXAMPLE	COMMENT
A student for his term paper makes a study of European wars and notices that in the years preceding the outbreak of recent wars there occurred an increase of armaments among the belligerents. He states as the thesis of his paper, "Increased armaments appear as one of the major causes of European wars."	The increase of armaments and the outbreak of war may both be the effects of the same cause or causes. Friction and tension between nations can result in (a) armaments and (b) war. The armament race precedes closely in time and belongs to the same realm of phenomena as the outbreak of war, but this is not a sufficient condition for saying that war is an effect of it. The possibility of a cause having several effects makes it difficult in involved situations to see, where one effect precedes another in time, that the former is not a cause of the latter. Laboratory workers attempt to isolate factors in the complex and to alter them one by one, in the hope of producing some of the effects alone. Where they succeed, experimenters know that they are dealing with linked effects. Where the events resist isolation, the experimenters accept a causal connection, the earlier standing as perhaps an intermediate cause. If it were possible to experiment with whole nations and epochs, sociologists might discover, by isolating economic, political, psychological factors, whether armament races are linked effects of antecedent causes or in fact are an intermediate cause of war.
A testimonial reads, "Relax tablets relieved my headache. You can end your headache troubles, too!"	This is the crassest sort of post hoc reasoning, even assuming the sequence of events true and the opinion offered in good faith. The fact that the body rids itself of many ailments is overlooked when attention is centered on the little pink pill. No doubt the fact that our present age expects wonders from medicine explains the persistent popularity of worthless patent medicines whose patrons discover themselves "cured" after they have taken an alleged remedy. Of course, Relax pills may be effective against some headaches: we shall never establish this by such testimonials.

4 Faulty Analogy

An analogy is the assertion that things which resemble each other in some respects will resemble each other in some further respect. It is thus a generalization predicting the occurrence of class characteristics. We are constantly applying our knowledge of one thing to another. If a friend asks us to help him repair his Chevrolet, we get to work on the basis of what we know about our Ford. If we are wondering whether group medicine will work in the United States, we will look up the record in Sweden or England.

Let us suppose that x and y are members of class F , that is, they have the property f in common. Members of a class, of course, often share more than one property - the members of some classes share innumerable properties, for instance the class of human beings. To argue by analogy is to suppose that since x and y , members of class F , have properties $f_1, f_2, f_3 \dots$ in common, they will also share some further specified property f_m . Thus:

$$\begin{array}{ll}
 x_{f1} & y_{f1} \\
 x_{f2} & y_{f2} \\
 x_{f3} & y_{f3} \\
 \text{therefore, as } x_{fm} & \text{then } y_{fm}
 \end{array}$$

Now it is always possible that y will not show the property f_m , that the analogy will break down. Indeed, every analogy must break down at some point since the class members are similar but not identical. Though generalizing by analogy is dangerous when only one or two similarities are known, it is good reasoning if the number of essential qualities known to be shared is very large. But we must always be prepared for the point of "break down." There is no sure rule for predicting this point, though there are rough guides. The more characteristics shared by objects, the narrower the class is in its extension. In other words, as we add characteristics, we keep potentially limiting the number of individuals that qualify. For instance if

we start with the class of human beings, and then add the requirement "male," we cut out about half the members of the original class. Then if we add "over eight feet tall," we have brought our class down to a roomful, if that.

The fewer the essential characteristics shared, the wider the class. Plants, from the simplest lichens to the giant redwoods, share only the most general biological characteristics. A very wide class like this, of course, has sub-classes, but if certain common traits in some sub-class are discovered, there is a low initial probability that other members of the parent class will also share these characteristics. I find that carrots and turnips have certain things in common. Can I risk a prediction about squash and onions? About orchids and seaweed?

Faulty analogy consists either in assuming that shared properties will continue indefinitely to be found in new members, or in assuming that it is highly probable there will be some other shared property in a class so wide that there is only a low initial probability of finding any other shared properties relevant to the purpose at hand.

EXAMPLE	COMMENT
<p>Legal arguments often take the form of showing that a given case falls under a precedent, which is to say that it is analogous to some previously decided case. And the courts commonly decide the meaning of a statute by examining whether or not a particular situation is analogous to the situation with which the statute was designed to deal. The case of <i>Omaha and Council Bluffs Street Railway Company vs. Interstate Commerce Commission</i> (230 U. S. 324) will illustrate legal arguments founded on analogy. The Supreme Court had to decide whether the statute granting the Commission jurisdiction to regulate "railroads" applied to a streetcar line which crossed a state border. Some state courts had previously held streetcar lines were railroads in the sense of the statute; others had held they were not. Mr. Justice Lamar gave the Supreme Court's decision as follows:</p> <p><i>This conflict of state court decisions is not so great as at first blush would appear. For all recognize that while there is similarity between railroads and street railroads, there is also a difference. Some courts, emphasizing the similarity, hold that in statutes the word "Railroad" includes Street Railroad, unless the contrary is required by context. Others, emphasizing the dissimilarity, hold that "Railroad" does not include Street Railroad unless required by the context...</i></p> <p>Mr. Justice Lamar then proceeded to examine whether the similarities of streetcar lines and railroads made the two analogous <i>for the purpose of regulation</i> by the Interstate Commerce Commission. He pointed out that railroads were not characteristically local in their business, they connected with other lines to move freight across the country, they were prone to engage in rebating, pooling, and discrimination (which the statute was designed to regulate), they operated elaborate stations and terminal facilities. Streetcar lines, on the contrary, were primarily local, rarely connected with other lines covering widespread areas, did a passenger business unsuited to rebating, pooling, or discrimination, and generally picked up and deposited passengers on the street. Noting these differences, the Court decided that a streetcar line could not be included by analogy as a "railroad" subject to Interstate Commerce Commission regulation.</p>	<p>This instance is typical of the careful application of analogy to settle a legal problem. The comparison is limited to similarities and differences which are relevant to the question at hand. It is quite possible that on the next day the Court might have considered a streetcar line included by analogy as a railroad for the purpose of taxation or for some other purpose in which the similarities might be more relevant than the differences.</p>

King James I of England was wont to argue that as the monarch is the head of the state, republicanism is demonstrably false. If you cut off the head of a body, the other organs cannot function, and the body dies. Similarly, if you cut off the head of the state, the state may flop around awhile, but it is due to perish in time or become easy prey to its neighbors.	This kind of argument is sometimes called "figurative analogy." It is only in a figurative sense that a state can be compared to a living body. From such comparisons no generalizations about further relevant shared characteristics are at all probable.
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Figurative analogy may be safely employed only by way of illustrating one's meaning. In order to explain the changes one may expect to experience in passing from youth to age, I may, in a purple passage, write: "Life is like a river. It begins as a joyous brook, matures into a powerful stream, and finally creeps on sluggishly until it is lost in the sea." No one would be apt to draw from this and from his knowledge of rivers principles about the conduct of business or human relations.

EXAMPLE	COMMENT
Nature Lover Peter has observed that the Humpback salmon dies after spawning in the rivers of the Pacific Northwest. He observes a "run" of King salmon in the same region. "All these salmon," says Peter ruefully, "can never return again to the sea after spawning."	The class of salmon is a very narrowly constructed class, but it is still only highly probable, not certain, that what is true of one sub-class (species) will be true of all. Were Peter a better naturalist, he would discover that King salmon, unlike the Humpback, survive spawning and swim merrily back to the sea.

One highly effective device for refuting an opponent is to exaggerate his contention by asserting "Then you must also believe that..." or "This is the same as saying ...," Such phrases commonly introduce an extension so that the discussion turns to considering the problem in the light of some allegedly analogous situation.

EXAMPLE	COMMENT
Paul, ignorant of the niceties of disputation, says, "I believe the city ought to collect the rubbish as a municipal service. The present system of private contracts has produced poor service and led some people to duck the rate by throwing rubbish away on streets and vacant lots," Peter, in pretended astonishment, cries, "The next thing you will ask us to do is to go into the transportation business with municipal buses and into the power business with a municipal power plant. Step after step you will take us down the road through municipal ownership to full socialism."	Paul proposes one particular change to be made independently of municipal participation in other programs - which may or may not have merits irrespective of the "road to socialism." Peter's strategy in argument is: first, to extend the discussion to matters he considers more clear or favorable to his contention; second, to refute these other matters by demonstrating or assuming such action unwise; third, to conclude that the refutation disposes of the original - and allegedly analogous - proposition. Paul's only recourses are to decline the extension, declare it not analogous, or point out he is advancing one particular question and will examine <i>its</i> merits.

One further device of faulty analogy is common enough to deserve separate mention. It is so common, in fact, that it has been given a name: stereotyping. If an individual belongs to a class, then the individual possesses the characteristics common to the class. But that is all that the individual necessarily has in common with the other members. Stereotyping consists in lumping all sorts of individuals together and treating them as a unit for propaganda purposes, simply because they share one or a few common properties recognized by some familiar term in the language. It is this last matter of the familiar class name that seems to distinguish stereotyping from other varieties of faulty analogy. Political novices are often astonished to find Republicans voting with Democrats on some bills. Even parents are sometimes agreeably surprised when their own teenage children show no interest in hot-rod racing, unpleasant hair styles or the current popular music idols. The stereotype of the Republican seems to include the notion of "always fighting the Democrats"; that of the teen-ager seems to involve enthusiasm for the singer Simper Smirk and the tomato slice haircut.

EXAMPLE	COMMENT
A real-estate broker tells a colleague, "I don't have to worry about this deal. The buyer is a musician, and everybody knows musicians are babes-in-escrow." A few weeks later the broker ruefully confessed to the same colleague, "The deal fell through. I thought a musician would be a pushover, but it turned out that he knew as much about property values as I did."	All musicians know something of music. After that they are not a "harmonious" group.
Yankees will be Yankees and Southerners will be Southerners, that's for sure.	If this is a tautology, then it will be perfectly safe to base an argument on it. But the chances are that this is the so-called pregnant use of the terms - compare "Out West, where men are men." Translated, then, the example means something like "Yankees will be sharp-traders, narrow in their regional interests, taciturn like Coolidge, etc., etc., as well as being residents of New England or deriving from there. Southerners will drawl, believe in keeping "Nigras" in their "place," prefer to live in ruinous buildings whose white Grecian columns are entwined with honeysuckle, etc., etc., as well as being residents of certain states below the Mason-Dixon line or deriving from there." It is evident that, like other faulty analogies, regional stereotypes constitute an unwarranted generalization of the grossest sort: these people live in certain regions; therefore, they are bound to be marked with all the traits of certain neighbors. The use of a stereotype, then, as a premise in argument is always otiose. "Southerners are Southerners. So-and-so is a Southerner. Therefore..." What? Only that he lives in, or derives from, the South.

5 Composition and Division

Related to faulty analogy is the fallacy of composition; this is to assume that what holds true for each member of a class standing alone will hold true for all members of the class taken together. Since a whole sometimes does and sometimes does not exhibit the characteristics of its parts, it is not possible to assume that parts and whole will share the same characteristics in any given case. Illustrations are easy to produce. Someone might argue that since each member of the Supreme Court possesses his own personal prejudices, the decisions of the Court as a whole are bound to be the product of these personal elements. In fact, the very reason for group decisions is that a pooling of knowledge makes for sounder judgment than any individual member of the group is apt to produce. Incidentally, the fallacy of composition sometimes turns on the ambiguity of "all." Often "all" means "each instance." Thus the sentence, "All residents of these pueblos are Pueblo Indians," translates into "Each person, if he's a resident of these pueblos, is a Pueblo Indian." But sometimes "all" provides a way of talking about a totality (or Gestalt) that cannot be taken as simply a sum of its parts. No one would suppose that when Caesar wrote, "All Gaul is divided into three parts," he meant "Every instance of Gaul is an instance of tripartite divisibility." Whether or not the word "all" actually occurs in reference to a totality, there is danger in assuming that what is true of the whole is true in the same way of each of the parts, and, conversely, that what is true of the parts is true of the whole.

EXAMPLE	COMMENT
A lobbyist points out, "A tariff on meat will benefit the stockgrowers, a tariff on coal will benefit the coal miners, a tariff on toys will benefit the toy manufacturers, a tariff on any commodity will benefit the producers of that commodity. Therefore, a tariff on all commodities will benefit everybody who produces any commodity - and that is the whole country in one way or another."	Since producers are also consumers, tariffs on everything may well bring more total costs than total benefits. Also, multiplication of tariffs inspires retaliation and creates other complications which cut down international trade and threaten domestic production.

An economist writes, "Each individual will further his own economic interest to the best of his ability. The result is that all individuals together - society as a whole - thereby achieve the maximum possible economic advancement."	This cardinal assumption of Adam Smith's <i>laissez faire</i> economics is nowhere maintained in pure form today. Experience has shown that while the efforts of individuals seeking their own welfare contribute to the economic advancement of society in some types of production, they lead to duplication and waste in other areas. Consider the result of unregulated, competitive exploitation of an oil field.
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The *fallacy of division* lies in assuming that what holds true for all members of a class taken together is necessarily true for each alone. This assumption is the converse of composition. Of course, what is true of all is often true of each, but not necessarily so. For instance, a general may strive to preserve the fighting efficiency of his army as a whole by giving orders which will result in the fighting efficiency of some units being destroyed. Less melancholy examples can easily be adduced.

EXAMPLE	COMMENT
A city alderman proposes, "The City revenues have fallen off. I propose a 20 per cent across-the-board cut for all City Departments. We'll just have to get along with four-fifths of the service we've been used to."	It is incorrect to assume that a 20 per cent budget cut will result in services differing only proportionally from the previous standard. Possibly reduced financial support will result in proportionate reduction of service in some departments, other activities may become unfeasible, and still others may not be noticeably affected. Further, the effects may be qualitative as well as quantitative. Street sweeping may be quantitatively reduced, while the City Engineer may quit and a competent replacement be unobtainable.
A famous lecturer says, "The credence given to Marx's economic interpretation of history is extraordinary. Why, Marx's own life denies his theory. Born the son of a lawyer with a comfortable place assured to him for the asking, still he chose the hard and penniless life of a political exile. If economic motivation had so little appeal for Marx himself, how could he believe all history to be determined by the economic motivations of mankind?"	The lecturer's observation is thought provoking. Marx's own life does indeed provide a striking instance of a man whose primary motivations were non-economic. Even if Marx's point is right that all society organizes itself along the class lines of economic interest, it would be an instance of the fallacy of division to suppose that what is true of all taken together, need be true of each individual. Economic motivations might be a least common denominator sufficient to determine class interests even though no one person was primarily motivated by them.

6 The All-or-Nothing Mistake

Though truth is sometimes a matter of black or white, much more often it ranges through a whole spectrum of colors. One catches a train or fails to catch it. An electric light is on, or it is off. On the other hand, a government will never be simply "good" or "bad," for here the range of possible variations is infinite. Where a situation requires a relative judgment, it is a fallacy to wrap up a judgment on it into one hasty bundle labeled All or Nothing, Good or Bad, Blameworthy or Blameless. This kind of thinking peoples the mind with simple heroes and villains instead of characters that are true to life.

The all-or-nothing mistake assumes a naked dichotomy where no such simplification is warranted. Mr. Justice Frankfurter has called this "the great either-or." For example, an office holder may declare that others must either favor his policies or oppose them. This position overlooks the possibility of indifference as well as favoring some policies and opposing others. The assumption that there is no middle ground is a favorite weapon of persons desiring to force others to take sides in black-white terms even though the problem is not simple and though its fair solution requires an evaluation of several possibilities. Hitler takes shrewd account of this in discussing propaganda:

The task of propaganda is, for example, not a weighing of the various rights, but the exclusive emphasis of the one advocated by it. It has not to inquire objectively into the truth, so far as it favors the other sides, in order to represent it to the masses in doctrinary honesty, but it has to serve its own side continuously....

This feeling [i.e. the thinking of the masses] is not complicated, but very simple and conclusive. There are not many differentiations, but a positive or a negative, love or hate, right or wrong, truth or lie, but never half so and half so, or partially, etc.

—Hitler, *Mein Kampf*

No one can wholly avoid this fallacy of treating complex things as if they could be divided into simple extremes. Sometimes action has to be taken according to an unambiguous decision even though a two-fold classification is unrealistic. Doctors

squirm when the lawyer demands whether or not a certain individual shall be pronounced sane or insane. Medicine is more complicated than the gates of an insane asylum, yet someone has to know when to swing the gates open or shut. Again, the shortness of time and the demand for effective action forever press toward decisions which a man would blush to defend in the abstract. In the polling booth the claims and counterclaims, charges and analyses, promises and issues - all the vast complication of the campaign - must be reduced to simple votes for or against candidates, yes or no on propositions. The citizen most aware of the complexity of issues and personalities has no more choice of alternatives than the most irresponsible elector.

Where there is not the demand for an immediate decision, impatient individuals commit a fallacy when they cut through complexity as if everything has to be decided by simple affirmation or rejection. "Spare me the details - is it good or bad?" This is the "sentiment" of the masses which Hitler says is the function of propaganda to exploit. To consider the all-or-nothing fallacy important chiefly as a tool of the demagogue is to miss its universal range. It is a constant attendant in discussion, as the following examples will attest.

EXAMPLE	COMMENT
The chairman of a prize committee: "In the case of all these prizes, you should notice that honor is often a more important motivation than money." Mr. Peter: "You mean that money doesn't matter?"	A crude example though not unknown in live discussion. To suggest qualifying an idea is often interpreted as full rejection by one who makes an intellectual habit of all-or-none.
"The only way to convince this union crowd is to hold out until they're too damned broke to strike any more. You treat 'em kind, and they take a mile. Get tough, and they'll knuckle under."	Better call in a mediator! The speaker may be right in his assessment of the particular union. But where there are many possibilities in a situation, the chances are that any only-way solution is an unwarranted attempt to cut through a complex problem.
Paul: "Is Henry intelligent?" Peter: "Sure he is."	In casual conversation people don't insist on precision. But what can asking for or conceding Henry's intelligence mean? Men are not sharply divided into the intelligent and the unintelligent. Paul and Peter probably know this and in context understand each other well enough.
<i>The Communist Manifesto</i> : "The proletarians have nothing to lose but their chains. They have a world to win." "Workers of the world, unite!"	Proletarians! Lives, property, freedom may be lost. The world may be less than "won." But let no one underestimate the power of a slogan.

7 The False Dilemma

Everybody, unfortunately, has experience with true dilemmas; that is, when one is forced to choose between undesirable alternatives. To have this operation is dangerous; to delay is to risk illness or even death. To study tonight is to give up the party; not to study is to risk flunking the test. To go to the party and study is to give up all sleep. In a false dilemma, the speaker represents the situation as offering only undesirable alternatives when the facts do not warrant it. One of the given alternatives may actually be neutral or even desirable, or, more frequently, an unstated alternative exists which is at least neutral. In other words, the false dilemma turns out to be no dilemma at all. The all-or-nothing fallacy and the false dilemma are related since each involves ignoring alternative positions. The relation of dilemmas to the rules of classification is explained in # 8 b.

EXAMPLE	COMMENT
There is a famous Greek dilemma. One of the sophists advertised that any pupil of his would win his first case at law or not have to pay for the course of instruction. A pupil completed the course, announced that he did not expect to practice law, and refused to pay the sophist for the course. The sophist sued, and the pupil entered the following plea: "If I lose this case, according to the agreement I do not have to pay, as it is my first case. If I win it, I do not have to pay by the judgment of the court." The sophist replied: "On the contrary, if you win this case, you have to pay, according to the agreement. If you lose it, you must also pay, according to the judgment of the court."	It is not known how the case was decided.

A farmer can never expect to make much money. Either the farmer raises a bumper crop and finds that the price is low, or the price is all right, but he finds he has only a meager crop to dispose of.	This dilemma is false since it overlooks the possibility of government subsidies and price supports as well as other factors. Refuting a false dilemma by pointing out an additional possibility which is not undesirable is called going around or between the horns of the dilemma.
Abbe Sieyes, a figure in the French Revolution, posed this famous dilemma concerning a bicameral legislature, "If the second chamber agrees with the first, it is superfluous; if it disagrees it is pernicious."	This is a false dilemma since disagreement of the second chamber is not necessarily "pernicious." One may question either of the assumptions of a dilemma, namely, that the alternatives are exhausted or that all the alternatives are alike undesirable. Refuting a false dilemma by pointing out that one of the alternatives is not undesirable is called taking the dilemma by the horns.

TROUBLE WITH CONSTRUCTIONS

The previous section, starting with the supposition that the evidence was fairly well in hand, was concerned with the problem of knowing what could reasonably be asserted about it. There was no question as to what the situation involved, and it was assumed that the classifications and general notions were serviceable. All cows are brown - the problem was the handling of *all*, rather than *cows* or *brown*. Does the evidence warrant saying *all* or only *some*? The notions *cows* and *brown* were assumed to be clear and intelligible. In this section the interest centers on the formation of the notions themselves, rather than how they are related together in propositions. The most difficult problems in managing the materials of argument arise in the forming of notions and classifications and the like. We shall use the term constructions to cover all notions and abstractions. All abstract thinking proceeds by selecting aspects of the situation and making constructions out of them. Some constructions are relatively easy to understand - *cows*, for instance - a three-year old can form the notion of a cow. The names such simple constructions bear are well known terms in the common speech. Every user of the language can learn the proper construction and hence the correct use of the name. The class name "child" represents a construction made up from certain things in the world, children, markedly distinguished from other things: babies, adults, and, for that matter, elephants. The construction reflects the situation in the world in a rather obvious way. A speaker, if pressed, can give at least rough conditions for a proper use of the term.

→ →
class name *means* construction *stands for* situation

As the class name is often a familiar term in the common language and the situation is the state of affairs in whatever aspect of the world is under discussion, the only subjective part is the construction, though, perhaps, since the speakers communicate the construction, this part should be called "inter-subjective."

All constructions involve at least implicit classification - babies are grouped under the heading "babies" and children under "children." Now speakers are constantly making new classifications. For this reason some constructions do not have a traditional name in the language, and a name must be made up for them. It may be a new word or a whole new phrase made up of old words, but whatever it is, it often names a construction that stands for characteristics of the situation not previously remarked. Since all writing and speaking of point proceeds by drawing attention to fresh groupings of things, it is evident that anybody who wants to make a contribution in discussion must understand the elements of classifying if his constructions are to be intelligible.

Suppose a boy gets from his uncle a bag containing a hundred marbles. And suppose this boy has a little sister who wants to play with the marbles. The little girl begins to sort them. First she arranges them by color, green with green, red with red. Then she sorts them within the colors, clear glass with clear, cloudy with cloudy. There are some hard to classify: opaque agates, little dull clay balls, marbles of mixed colors. She has disappointments. Though she is very fond of purple, there are no purple marbles. And some of the prettiest blues have little chips and flaws.

The boy says his sister is silly. *This* is the way marbles should be sorted. He first pretends to shoot with each one, then sets aside one of the "aggies" and two of the chipped "migs" as "shooters." The rest he arranges in several orders, regardless of color or marbling. The least mig, he tells his sister, is worth ten of the "dough babies," but the best migs are worth ten of the worst, and the aggies are worth at least ten of the best migs. A good shooter is worth the lot; in fact, it is beyond price, but he won't know if there are any good shooters until he has tried some out in competition. His sister doesn't understand anything he is talking about and decides it is really boys who are silly.

Here are only a hundred marbles. Yet it is at once evident that there are a great number of ways to classify them. If they are sorted as to color, there will be empty classes, purple for instance. If "cloudiness" (marbling) is the criterion, then the clay marbles present difficulty: they are not marbled, but they are not transparent, either. If cost is to be the consideration, then there are two obvious ways to put them in order: monetary value, for agates are relatively expensive, or trade value, which

seems to depend on the fashion or taste of certain boys in the neighborhood - one marble "costs" ten others. And so on, indefinitely.

The *situation* is present. It would be a truly "silly" error to assume, because the marbles are classifiable as to color, that there must be somewhere a purple marble. And maybe there will not turn out to be a first-class shooter in the bag. So the situation puts a limit to the number and kinds of constructions. And the names ("shooter," "pretty ones") or the descriptions ("worth ten of") must mean the constructions. This is all we intend by these terms, and there is no metaphysical commitment in the notion of the "situation."

Even in the simple cases of classification, there can be trouble. It will be seen that difficulty can arise over where to put marginal cases. When this happens, the classification may carelessly omit them altogether - they get left out. Sometimes the classification seems to require putting the same object under two coordinate headings. In this event, the classification does not function in respect to that object, for the general function of a classification is to *separate*.

From these considerations, since the time of the early Greeks certain criteria of classification have been enforced. They can be expressed simply, and we shall try to state them in a set of rules. The fallacy of violating any of the rules falls under the general head of "faulty classification."

- **Rule 1.** The classification must be exhaustive. (The dough babies must not be left out, simply because they don't fit the division of clear or cloudy.)
- **Rule 2.** The classification must be exclusive. (Cross-classifications are permissible - cloudy-red marbles - but there must be what is sometimes called a *fundamentum divisionis*, which prevents putting something under two coordinate headings.)
- **Rule 3.** The classification must be adequate to the purpose for which it is designed. (The little girl's classification of the marbles into colors, etc., though perhaps suitable to the purpose of the little girl, is not adequate to the game of migs.)
- **Rule 4.** The divisions of the classification must be precise enough to avoid serious marginal cases. (If boys don't usually agree on, say, which marbles are shooters, then this construction is vague.)

8 Faulty Classification

The violation of each of the four rules gives a different fallacy. Some of the rules, however, are more complicated than others and will be treated here at greater length. There are many ways in which a construction can be vague (Rule 4), and it will be useful to distinguish several of them in the discussion. Similarly, the third rule is related to some misconceptions about the nature of classification, and we shall also wish to discuss these at length. The fallacies of non-exhaustive or non-exclusive classifications should be relatively easy to understand, and one or two examples will probably suffice. So under the present heading, though all violations of the rules are properly regarded as "faulty classifications," we shall take up only the failures to be exhaustive and exclusive.

(a) Non-exhaustive Classification (Rule 1)

To criticize a classification for being non-exhaustive is to assert that it does not take account of the whole situation. It is always possible to divide, that is to classify, the situation so that everything is regarded as one thing or another without remainder: beautiful or non-beautiful, true or non-true. Such divisions are model classifications as to being exhaustive, but they may be far from adequate to a given purpose (see #6). The difficulty arises when the classification is supposed to distinguish important characteristics in the situation.

In argument, where the classifications are often more complicated than cases like the marbles, one way to test a position depending on them is to search for elements in the situation which have got left out. If one finds such elements, it by no means follows that the classification is deliberately selective (see #1) or deceptive. It may just be careless. It is often possible to correct classifications that leave something out by a more careful attention to the basis of division.

EXAMPLE	COMMENT
Traveling Salesman Peter has submitted his expense account. A few days pass, and the boss calls him in: "I understand the \$421 for plane fare, the \$128 for hotel bills, the \$84 for dining out, and the \$37 for entertaining. But what is this \$202 for miscellaneous?" Peter shrugs, "Oh, that's for things I couldn't fit in."	Possibly Peter will satisfy his boss, but if he uses the same principles of accounting in his income tax returns, he can expect a visit from the treasury agents. This example is not an argument. It merely illustrates the frequent use of the feeble "miscellaneous" heading to take care of classifications which are not exhaustive.

Overheard on a bus: "She never says a kind word, and when she does, she doesn't mean it."	The speaker here has made what is called an Irish bull, that is, a statement that on the face of it is contradictory nonsense: "I'll never forgive you until the day you die, if you should live so long." The Irish may use the bull for humorous effect, but the speaker in the example presumably recognized that the distinction "kind or unkind" didn't cover all the evidence, and that a third division "only apparently kind" was needed.
A critic writes, "Ivy Compton Bennet and Paul Goodman, to name two, are lively writers pointing to new directions. Yet important modern novels fall into three classes, all unfortunate for contemporary letters. There is the historical novel, more or less carefully reconstructing a period or a situation of the past and exploiting it to give us an understanding of our heritage. This is the proper function of the historian or biographer, not of the novelist. There is, secondly, the psychological study, which purports to convey by literary means insights into personal relations. This seemed a promising field initially, but all the novels of this school are failures, and now it is evident that failure is inherent in the method. Finally, there is the novel of manners, in the tradition of Jane Austen and Henry James. But this tradition is exhausted, and what we get today are problem pieces and regional studies, like those of the southern school."	Even if it can be assumed that the critic's elliptical arguments convey sound judgments - that, in fact, each of the three classifications mentioned has failed and is now creatively useless, the unspoken conclusion that the modern novel is in a bad way as a literary form follows only if it is true that there are no other varieties of novels than those mentioned. There seem to be many interesting novels that do not fit the categories of the critic, some of them also very different from each other, for example the novels of Ivy Compton Burnett and Paul Goodman, whom the critic himself mentions.

(b) *Non-exclusive Classification (Rule 2)*

A classification is non-exclusive when elements in the situation get put under more than one co-ordinate head. The trouble here can sometimes be corrected by choosing a different basis of division. A simple artificial example would be for someone to attempt to divide animals as "cold-blooded" or "vertebrates." Since reptiles, fish, etc., are both, this classification does not operate for these important sections of the animal world. The classification is easily corrected by distinguishing first among the vertebrates and invertebrates, then perhaps among the cold and warm-blooded animals. The shark then is properly classified as species vertebrate, subspecies cold-blooded; elephants as vertebrates, warm-blooded; crabs as invertebrates, cold-blooded. This is not very profound, but it is at least applicable to the animal world.

One way to examine an argument dependent on a classification is to test whether or not the classification is exclusive. If it is not for any one case at all, then there is a possibility that the classification is not applicable to the case or cases at issue in the argument. If the classification is faulty in general, then it may be faulty in important particulars. Again it should be observed that the fault may not be deliberate. It is very hard to make adequate classifications, and the classifier may simply not have noticed that his divisions are not applicable to certain elements of the situation. The thing to do is to examine the *fundamentum divisionis*, the basis of the division, and see if the classification can be repaired.

EXAMPLE	COMMENT
Peter argues, "You either save your money or you invest it. If you save it, you get caught in the inflation, since money in the stocking will buy less tomorrow than it will if you spend it today. If you invest it, you run the risk of losing it. They've got you going and coming."	Many forms of savings are relatively free of risk - deposits in banks, government bonds, and some types of investment trusts. The accumulated interest is normally larger than the rate of inflation. In the case of sound stocks and some real estate, the value inflates with the rest of the economy. Peter's argument is a false dilemma.

All arguments pose a dilemma insofar as they rest on classification. The dilemma becomes a false dilemma when the classification is faulty. False dilemmas turn on a non-exclusive classification whenever one of the alternatives is not as represented, just as it will be non-exhaustive whenever there is a third alternative. In this connection it will be instructive to review #7 and see if you can decide which of the dilemmas cited there get their plausibility from non-exhaustive classifications, which from non-exclusive, that is, which violate Rule 1 and which Rule 2.

9 Misconceptions about Classification (Rule 3)

The problem of the relation of classifications to the situation is a difficult one, and thinkers have often gone wrong on it. In fact, the theory of "sets" or classes is still a very busy field in mathematics and logic. What we say here about classification and constructions in general must perforce be elementary and partial. We are interested in fallacy: in this connection two main misconceptions of the function of classification have led to broad errors in argument. These errors are related to the philosophical systems of Platonism and relativism, but we shall try to characterize them without a long digression into the history of philosophy.

Classifications are expounded in general terms, the so-called universals. This means only that when speakers use general terms in the language, such as "man," "woman," "child," they are classifying objects in the world according to certain traits or referring to the class of such objects itself.

1. Peter is a child.
2. The child is the father of the man.

In (1) the speaker says that Peter belongs to the class of the child (children). In (2) the speaker says something in general (hence "general terms") about children, as well as about fathers and men. General terms like "child" mean certain constructions, and the constructions in turn obviously stand in some way for the situation. All children have a great number of traits in common. The situation in the world of human beings seems to impose a construction for "child," so that a language which lacked a term for the child-construction (that is, one can imagine, had only a word for *person*, which provided no guide to age or maturity) would certainly seem to lack a much needed term. Perhaps it would be correct to assume that the construction *child* is so much needed that every language has one or more names to mean it. In this common-sense way of talking about general terms, it will be seen that there are two notions at least that will stand examination. What can it mean to say that the situation in the world "imposes" a construction? What can it mean to say that a term is "needed" for a construction? Reification and relativism give very different answers to these questions, and each can lead to serious error.

In connection with Rule 3 (that classifications must be adequate for the purpose for which they are designed), we will argue that these errors arise from a misunderstanding of the role of purpose. Reification holds that the structures are imposed by a suprasensible world, and that the only purpose that the classifier should have is to learn to know them as they are. Relativism holds that there are no structures in the world or anywhere else; there are just totally discrete particulars. Hence in relativism no limits are set to the activity of the classifier, which is anyhow a mere exercise in fiction. We shall take up these misconceptions in turn in the form in which they result, for argument, as fallacies.

(a) Reification

In the *Phaedrus* Plato says that classifications should not proceed, as a bad carver might, by cutting up the situation just anyhow, but should break it at the joints." The assumption is that there are natural structures in the situation which it is one's duty to discover. These structures are closer to reality than other characteristics, which are mere accidents due to the recalcitrance of the material in taking shape in imitation of the idea. The idea is in a heaven, and it is "ideal," that is, perfect, changeless, timeless. The things of this palpable world try to imitate the ideas, with indifferent success. The ideas, the eternal structures, are after all free from the gross embodiment of sense experience, in their pristine perfection. What you have got to do, unless you want to hack away as a bad carver, is to discover the natural structures, those closest to the ideas. Then your classification will produce neat joints and chops.

This view has the common-sense merit of recognizing that constructions stand for characteristics of the situation. It has the disadvantage of a great unprovable assumption, namely, that the characteristics referred to by the "natural" constructions are somehow more real than the other characteristics present. The preferred status of some structures over others is that the Platonists prefer certain purposes over others in classifying. These purposes turn out, on analysis, to be precisely those purposes imbedded in a culture and so traditional in their view of the world that they are felt to be natural and get built into the language. They have names in the common speech, such obvious names as "man," "redness," "goodness." Language seems to render this Platonism a natural thing to believe, and it is not surprising that it makes a strong appeal. This is not only a view that the division between, say, child and man is a natural division; it goes deeper. The term "redness," for instance, since it exists in the language, would seem to be a term for something, to name something, just as "the New York Central Railway" names a very complicated and ramified system. It does not seem far-fetched to assume that, since redness has a name, it must exist. "Red is a primary color," is a perfectly legitimate expression in the language but one implicitly making an astonishing claim. Does this not seem to say that there exists a class of colors, rather like the class of children, and that red is a member of this class? Not this book or this country schoolhouse, of course, but redness itself, the redness that makes red the surfaces of this cheek or this rose. The inventor of language was a Platonist. Modern Platonists adhere to what they call the "perennial philosophy," and they acknowledge this philosophy has a "natural piety toward language."

There is more to Platonism than advice to eschew new-fangled terminology and modernistic or otherwise reprehensible ways of looking at things, that is, of making constructions. The senses can never give knowledge of redness, only of this red object or of that - and even the best example is not perfect. The senses, likewise, cannot give knowledge of child, only of

Peter or Paul or Hazel. But these particulars can grow old and die, and knowledge must be an ideal ageless perfection. There is no point in a feeble copy. However clear the photograph, one would prefer to see the person. However typical the person, one should prefer to know the Idea. Peter or Paul or Hazel are imperfect copies of the ideal "child." Thus, in Platonism the ideal child and redness are conceived of as existing purely, of floating about, as it were, ready to enter into particular bodies or surfaces.

This *reification*, thing-ization, of preferred constructions is a fallacy when it leads to mistakes in argument. Philosophers may do as they choose in deciding what things are "real" and what are not. But when they carry over their reifications into other fields, then they are asking for unnecessary trouble. The history of science, of affairs, even of mathematics has been troubled for generations uncountried by demands for "real definitions," assertions that, something *is* because it *must* be, denegations of whole areas of inquiry as unreal and wicked.

Reification, then, is the "hypostatizing" of entities, that is, the making of abstractions into substances. It is the assumption that child exists (in a Platonic heaven) over and above Peter, Hazel, Ethel. It is not necessary to make this assumption even if language suggests it. Universals, such as "redness" and "child," can be interpreted in a way that makes no philosophical claims as to whether or not the constructions they name refer to entities in the real world. This way of handling them is called *Reduction*.

Reduction is a rule asserting that any sentence containing a general term, if the general term designates an intelligible construction, can be reduced to a sum of sentences containing mention only of particulars. Abstractions ("redness," "justice") are included under general terms. Thus, A reduces to a_1 or a_2 or a_3 ... or a_1 , where A is in a sentence containing the general term, and a_2 , a_3 sub, etc., are sentences referring only to particular instances. Thus the sentence, "A child needs security," as far as the child-construction goes, reduces to "Peter needs security, or Hazel needs security, or Ethel needs security," and so for all children. "Red is a color," similarly reduces to a mention of red books, red balloons, and other objects. The word "color" in "Red is a color" points out that whenever an object is red it is colored, that is, belongs to the larger class of all red, green, blue books and all other colored objects. This may seem a strange kind of "reduction," involving, as it does, expansion to unlimited numbers of sentences - in the case of "child" one, in fact, for every individual young human being that now is, ever was, or ever will be. The "reduction" consists in the boiling down of general terms to particulars. The difficulty presented by the great number of sentences is only practical. Theoretically, it is soon clear how the process works out for the sentences in question, and since the series are fairly orderly, a sort of induction can be applied to show the reduced content of the general terms. (In point of fact, it seems that children actually learn the use of general terms in much this way.)

Consider "Peter is a child." This begins immediately to give the extension of the class by naming one member. Reduction of "child" in this case begins by simply designating a class member by its proper name. When the extension of the class is evident, the general term can be eliminated another way: it is now possible to single out essential characteristics which Peter shares with Hazel and Ethel and other children and then to say that Peter has these characteristics, thus giving the necessary and sufficient conditions for verifying the sentence "Peter is a child": Peter is human and aged y years, where y = a number under 12.

What reifiers do is resist the rule of Reduction. For them the question "What is a child?" is not a question of how "child" is used in the language, or rather, it is a question that asks for *more* information, namely, what a child really is. In addition to Hazel, Ethel, Peter, and all the children, for the reifier there is another entity in the world, *child* which Peter, *et al.*, in their different and imperfect ways partake of, share in, embody. Similarly, with colors, there is this red object, and that, and moreover redness, the idea which enters into teacher's pencil, Mary's blush, the Russian flag. Redness and child exist together in heaven, along with Justice and bed (Plato's most famous examples).

In these simple cases reification is not apt to lead to confusions of the sort "Is redness red?" or "Is childness childish?" At least in the arguments about ordinary affairs, it more often leads to pseudo-philosophical meanderings about whether justice is an absolute or relative good, whether art can be for art's sake, whether a savage dog which is not man's pal is really a dog after all.

Suppose someone to argue, "The true friend has never yet been found. Damon was not a real friend of Pythias, David of Jonathan, Johnson of Boswell. Real friendship implies absolute equality, an equal sharing - a having of 'all things in common.' Otherwise, one will have the advantage of the other. And since there can be no absolute equality in all things, even among identical twins, there can be no real friendship in the world. Perhaps there can be friends among the angels, but certainly not among men."

How can such an argument be met? It is set up in such a fashion that no evidence can possibly refute it. The speaker hypostatizes an entity, apparently in heaven among the angels, of true friendship, which involves (a saying of the ancient Greeks) "having all things in common." Then he demonstrates that this kind of sharing is impossible in the sense of an *equal* sharing, which is certainly one sense of sharing. By what is apparently a heavenly intuition, the speaker knows that true friendship implies equal sharing. Since such equality is impossible in the nature of things, therefore, true friendship is illusory.

The only possible answer is to point out to the speaker that the way one learns how to use the term "friendship" is precisely by observing how it is applied in the cases of Damon and Pythias, and other friends. This is obviously a high-level abstraction, involving references to many kinds of behavior - speaking well of each other, being helpful, liking to be together, having mutual trust and confidence. But it can in principle be reduced to particular events under each kind. What would the speaker say if one pointed this out to him? Presumably that he knew all this sort of thing, that his point was precisely that all this was not enough to constitute friendship. There is no way to answer such an argument. As long as the speaker persists in the habit of making a thing out of an abstraction and of saying that some other thing is clearly not that thing, he is at once so right and so wrong that argument is impossible. Obviously nothing on earth is identical with anything else on earth, to say nothing of something in heaven which is at once immutable, atemporal, aspatial, perfect.

The firm way to deal with suspicious abstractions in argument is to demand their reduction to particulars. If the opponent cannot or will not show that such a reduction is possible in principle, then further discussion is pointless, since no evidence or counterargument is relevant. One finds oneself involved in an unruly discussion. But if reduction is admitted, at least in theory, then it is possible in principle to test the argument. It may be possible to find a counter instance, to make experimental application, to verify or falsify.

The examples are designed to show some chief varieties of reification.

EXAMPLE	COMMENT
Case history of patient J.S. Young man, 28, complained to his pastor that his wife, in-laws, and associates at work were all "persecuting" him. Pastor sought the help of clinic, reported to clinic that there seemed to be the following grounds for the young man's complaint: Investigation showed J.S. aggressive, accusing those around him of plotting against him. These persons retaliated by avoiding his company, talking about him behind his back, and generally behaving badly towards him. His wife, especially, resented his jealousy and finally left him. What caused the pastor to seek the help of the clinic was the fact that J.S. refused to see how he was responsible for the way others behaved towards him. He maintained that everybody he knew had been "got to by a secret power." His wife and his friends were in fact, he claimed, the agents of that power. At his last interview with his pastor, J.S. threatened the pastor with a knife, claiming that the pastor was also an agent, trying to win his confidence in order to betray him. <i>Diagnosis.</i> Paranoia. Patient's social relationships are disturbed by his self-destructive tendencies. These he projects into an outside independent agency. <i>Recommendation.</i> Confinement and extended therapy.	J.S. actually was being persecuted in a way. His own aggressive behavior and distrust had alienated his wife, his relatives, and his associates. They avoided him and "talked about him." But notice that J.S. does not mean by "persecution" a construction that reduces to the sum of any particular occurrences in the behavior of others towards him. Instead, he sees all this as being inspired by a "secret power." He feels persecuted by a power, a kind of Platonic entity which is the cause of all the particular occurrences of persecution. The point is that there is a class of events having the common property of acts of persecution; the reification consists in making this property into an independent entity in the world, lying behind the acts and mysteriously causing them. It can be easily seen in this case that such reification is insane. It may be harder to detect the insanity in more ordinary cases.

<p>Commissar Petrov writes in Pravda, "Loans to smaller nations, subsidies, bilateral trade agreements, mutual defense pacts with the inevitable concomitant of air bases and arms supplies - all of these have an obvious policy behind them of forming aggressive alliances against the Peoples' Democracies. This is not even in effect denied, for the United States admits that its basic policy in the Cold War is 'defense' against communism. But what is denied is that all these activities reveal another policy, a deeper and more underlying strategy. This is the indispensable policy, in fact, of all monopolistic capitalistic nations: colonialism. All these activities of the United States carry out the capitalist necessity of imperialistic colonizing of so-called backward areas. The frank colonialism of the last century is no longer possible: the empires of Great Britain, France, the United States can not stand anywhere against the political aspirations of downtrodden peoples. So, as the powers are forced to yield political empire, with the other hand they impose an economic-military empire on the same peoples. Thus the activities of the United States serve two purposes: they attempt an aggressive encirclement of the Peoples' Democracies, and at the same time they enslave the backward areas in a new-style colonialism."</p>	<p>This argument, like most of the arguments of dogmatic Marx-Leninism, bases its proof on a reified entity. Starting with the common characteristic underlying the diverse activities of U.S. foreign policy, defense against communism (which it interprets as aggressive alliances against the "Peoples' Democracies"), the proof then alleges another common characteristic, colonialism. It is certainly possible that the United States could be doing two things at once. But what is the evidence for this second purpose? <i>Pravda</i> cites only contradictory evidence, the break-down of empire (apparently referring to the new-found independence of India, the Philippines, etc.), and alleges that this has led to a "new-style colonialism." There is a curious sentence about the "indispensable policy" of "all monopolistic capitalistic nations" being colonialism. And this is then referred to as a "necessity." The reader of this article is now in the presence of an Entity. Like the secret power of the previous example, this construction of an indispensable policy cannot be reduced to any supporting evidence, nor refuted by any contradictory evidence. The writer, as a Marx-Leninist, is speaking of a "truth" more basic than any mere accidents embodied in historical events. If pressed to explain, he would presumably cite other and still more fundamental entities - the "logic" or determinism of historical process, the dialectic of the class struggle. A rule attributed to the nominalist William of Occam warns that "entities are not to be multiplied beyond necessity." This means that you do not keep on appealing to entities, such as colonialism or the secret power, to explain what is already sufficiently understood. As such entities go beyond all possible evidence, they are unarguable. What, if not evidence, can possibly support or refute them?</p>
<p>King Aroo overhears one character reproving another for throwing away his future. Now King Aroo had just learned that his own future was nothing but a smear of tea leaves, so he begins looking through ash cans for the future that got thrown away. (This is from Jack Kent's famous comic strip for March 6, 1957.)</p>	<p>King Aroo's search is funny because the reification is so concrete that it might be something found in the ash can. Superstitious people seem to use the term "Future" as if it named a sort of country where events are already taking place which in time will be reproduced on this earth. These events can be dimly seen in crystal balls, tea leaves, cards, palms of hands. All you have to do is wait for them to arrive, like a letter already in the mail.</p>
<p>"The State is the divine idea as it exists today... It is the absolute power on earth; it is its own end and object. It is the ultimate end which has the highest right against the individual." Hegel.</p>	<p>King Aroo deserves a smile. Not so Hegel. His is a reification which, unfortunately, has millions of followers. The "State" its own end? What mystic thing is a state that can be an end apart from the welfare of individual people? "No, one thousand times, No! The supreme end is the individual, and collective institutions should have no more hold over him than is needed for his own individual development." Salvador de Madariaga. (Quotations from Hegel and de Madariaga are taken from Sontag and Beddie, <i>Nazi-Soviet Relations</i>. New York: Didier, 1948, p. VIII.)</p>

Personification (see #29) is a mark of reifying. Amateur psychologists often speak of the Ego or the Id as alternative souls presiding by turns inside the head (like the "ghost in the machine" derided by the philosopher Gilbert Ryle. Amateur strategists say things such as, "Strategy dictated the policy of island hopping." If this means only that strategical considerations led to the plan of island hopping, there can be no objection - economy "dictates" the use of personification in numerous more or less literary sentences (including some in this book). But if the speaker resists such a reduction of strategy, then a new thing has been born into the world. If one wants to waive aside such military considerations as subordinating operational tactics to over-all designs - there are these considerations, of course, but also something else

much bigger, namely, Strategy, or even Grand Strategy, which not only controls the plans but also, somehow, the planners, who are its instruments - then shake hands with Strategy and introduce him to Id and Ego.

Poets can get very different effects from that of King Aroo by the use of similar devices. Jean Cocteau depicts a character in a diligent search, not for his own future, but for his own death, as if there were a special (not just a different) death for everybody. In his *Orpheus* the same poet personifies Death as a woman surgeon. Other writers speak of a character's life as a mystical *Gestalt* - a sort of space in which the drama of his fate is worked out: the world is a stage and human beings are puppets moved by destiny. The Greeks personified the fates as the Eumenides, and T. S. Eliot depicts the Eumenides howling outside the window in *Family Reunion*. Such devices are of the utmost importance in literature, where they effect a dramatic economy. It is philistinism to complain of reification in poetry - there is no harm in the device, provided it is understood as a play of imagination.

(b) Relativism

Relativism stands at the opposite extreme from reification. If you want to render an account of a situation, the Platonists say that you must select for your classifications only the essential characteristics, the essential being those that make the situation what it is because they reflect the eternal reality. For the relativists, no characteristics are essential or even intrinsic. None are more "real" than any others. The relativists are impressed with the obvious fact that situations can be classified in any number of ways - thus the criticism of classifications must center on the purpose of the classifier. Since his freedom in making constructions is without limit, but since he does in fact choose one set of constructions over the others, why does he choose as he does? Well, he chooses to suit his purpose. The relativists add that since there is nothing in the situation to fix his purpose, it must be given by something extrinsic. This extrinsic, purpose will be found in the preoccupations of the classifier, his preconceptions, the peculiar concerns of his times, the unique interests of his class.

Relativists are thus poles apart from Platonists: there are no real characteristics in the situation, as the reifiers think, to "determine the constructions. The model of the nominalist or relativist explanation is the famous case of the ass that was placed exactly equidistant between two bundles of hay. Only the relativist ass does not starve to death in indecision, but makes a choice. This choice is not determined by anything in one bundle of hay to make him prefer it to another - that would be an intrinsic consideration. No, his choice is some extrinsic matter, such as the habit of always turning left to his dinner. Of course, there are more than two bundles of hay, for there is an indefinite number of possible choices in classifying situations.

Relativism bids us consider the case of the historian who sits down to write an account of, say, a battle. Thousands of objects are involved - men, guns, weapons. Thousands of events transpire - melees, charges, cries and deaths. The historian cannot know all of these. Moreover, he already knows more than he can use, in most cases. What does he do? He talks generally about the movement of wings and centers, about the breaking and holdings of fronts, about advances and retreats. He selects and arranges the materials and in so doing imposes a structure on what is essentially structureless. In short, as he cannot know all the facts and cannot use even all the facts he knows, the historian's structure is an invention of his own. It will be determined, not by the data, but by his own values, prejudices, needs, social or political commitments. If this is true of the account of a contained story, such as of a single battle, how much more so must it be of large "wholes," such as the history of the Punic Wars or, for that matter, of the Roman Empire.

The historian does not tell the truth about the past; he does not even tell a lie. (This assumes he doesn't fabricate evidence or conceal facts.) For relativism there is no truth beyond the particulars, that is, the actual documents and other data. There is only fiction. One account will be as "true" as another, for all accounts are relative (hence "relativism") to the narrow intellectual and moral concerns of the writer. As these differ characteristically from age to age, it will be necessary for each generation to rewrite history for itself. Charles Beard speaks of the views of the historian as being "arbitrarily established." F. J. Teggert says that an historian may seem to be presenting a picture of some distant time but that he is perforce speaking with the "voice of his own generation," and giving tongue "to the ideas and aspirations of his own community."

Relativistic theories have serious implications beyond the technical problems of writing and evaluating history. The Roman Empire is obviously a very large, multiform "situation," but other persons besides historians often must try to understand situations that are quite manifold and complex enough. It may well be that no constructural machinery can be devised that will adequately classify the events of the Roman Empire. But it does not follow from this that all situations are impervious to understanding. Even historical situations are not always vast and unwieldy, and relativists could hardly maintain that there is a difference in essential kind between historical and other events.

It is not so much the size and complexity of a situation that makes relativists despondent. It is the predicament of theorizing in gen-era]. They believe, in principle, that since the account of any situation involves classifying, that is, selection and arrangement, the account is not of the situation but of the bias of the classifier. What you get from an account of the battle is not an understanding of the battle, but an insight into the historian. So expressed, relativism seems a form of the fallacy of origin (see #19); that is, it invites you to pay no attention to the truth of what is said but only to the source of the remarks. But more is involved. It is a theory that, since the selection and arrangement are never in the situation but only in the mind, and since an account is simply the presentation of the selection and arrangement, there can be no understanding of the situation. All that there is to understand is a construction of the mind.

Of all the possible selections and arrangements, the man making the account chooses that particular way which best implements his purpose. In this sense the account is strictly relative to the purpose, and it is good to call attention to this relativism, for an understanding of the account must involve the concerns of the man making it. Our way of saying this is given by Rule 3. The classification is, we say, in fact determined by the purposes of the classifier. But does it follow that his account is not of the situation? The account is in fact limited by the situation. There is no reason to believe that the account of large situations (the Punic Wars) is different in anything except complexity from the small situation (say, the hundred marbles). Perhaps despondency over very ambitious history-writing is justified. But even Gibbon and Toynbee are bound by limits, and these limits are clear in the data. Aside from the obvious negative limits (Hannibal lacked H-bombs in his attacks on Rome), there are recalcitrant facts that also must be taken into all accounts (Hannibal failed to break Roman resistance). Historical and other vast situations present the characteristics they have and no others, just as do all situations. These characteristics are in principle classifiable, and the account can then be evaluated according to the well understood rules of classification. Evaluation of the purpose behind the account is an important matter, but it is a different matter.

EXAMPLE	COMMENT
Peter says to his wife, "Why are you reading those book reviews? Criticism is a farce. One critic likes what another critic cannot stand. Jones in the <i>Tribune</i> says that a book illustrates courage under adversity and that the characters are finely drawn and true to life. Smith in the <i>Gazette</i> says that the theme of the same book is that virtue is its own punishment and that the characters are puppets manipulated by a clumsy writer. Which is right? Neither! Each critic finds in the novel what he is looking for, and everything in the book proves anything you care to say about it. Why? Because there is no novel except in the reader's head, and what the reader likes and doesn't like depends entirely on his taste, This is why the old saying 'There is no disputing about taste' is so wise. What would two critics be disputing about? Two separate novels, one in the head of each. If it is silly to dispute about 'fictions,' it is silly to write or read criticism."	In a sense, there is a novel in each reader's mind, but it hardly follows that these cannot be very similar in salient respects. The events in a novel can certainly be classified in various ways, and the choice of ways will be determined by the purpose of the critic. This purpose, in turn, may be causally related to his taste. Similarly, the characters in fiction do and say things that are subject to various interpretations, just as people behave in life. But we do in fact understand each other. This is to say, our account of each other's character makes it possible to predict behavior, to get along together, to cooperate. In a similar sense, good critics give insight into the characters in a novel and elucidate the action. There is nothing mysterious about this. If the purpose is to find hidden motives, then psycho-analytical constructions throw light on the characters of a novel as of life. If the purpose is to show how the behavior is socially or economically directed, then the speech and actions will be ordered in a different way. A good novel is a rich and complex texture, and it will support many interpretations.
Student report: "I know a lot of historians think that President Jackson's quarrel with the Bank was a misfortune for the country. This merely shows how they feel about banks and about Jackson. As for me, I happen to feel different about things. I happen to admire Jackson. The historians have a right to their opinion, and I have a right to mine. After all, no one can say which of us is objectively right, since there's no way to rim the nineteenth century over again without Jackson."	"Objectively" here suggests the model of a laboratory where experiments can be "run over again." There are clearly other senses of "objectively," such as "in conformity with the evidence." Jurors cannot run a murder over again to see if the accused did in fact kill the victim, but they can nevertheless bring in an objective verdict,. In this model, unlike that of the laboratory, objectivity in a verdict ("opinion") implies a verdict in line with the evidence and free from the "subjective" elements of personal passion or bias.

This is all rather obvious. What is important to note about the example is the widespread supposition that "everybody is entitled to his opinion." This is simply absurd in the *kind* of case under consideration. The student is not entitled to an opinion counter to informed historical judgment, just as a juror is not entitled to an opinion counter to the evidence. If the present book can be said to have a general thesis, it is that nobody is entitled to an irresponsible opinion on anything.

10 Unnecessary Vagueness (Rule 4)

The fourth rule of adequate classification (see #7) requires that the divisions must be precise enough to avoid serious marginal cases. Let us briefly resume the account of the model of a scientific law (see Material Fallacies.) to see how classifications are set up in science. What needs to be added to the previous discussion is that science characteristically defines the divisions between the categories in terms of measurable properties.

One of the first things that impresses the young student or science is the difference between scientific and ordinary vocabularies. When he now uses such terms as "mass," "force," "energy," "velocity," he must use them exactly. The student finds that they are precisely defined; in fact, they are specified in mathematical equations. All the categories to which the student is introduced turn out to be almost perfectly determined. The laws and observations are expressed in terms as free from vagueness as it is possible to make them, the language of measurement and precise definition. Compared to the

language of ordinary affairs, that vapor of vagueness, scientists use a language that seems a relatively perfect instrument of communication.

The precise determination of the categories becomes possible in science because the phenomena dealt with are concrete: they can be measured. This means that the laws are so formulated as to be open to test by procedures of the laboratory and of the trained observer. It means, moreover, that the definitions can in all typical cases be stated so clearly (since they are given in measurable units) that these definitions make explicit the necessary and sufficient conditions for the application of the terms: a given thing or event is an instance of a particular category if and only if such and such. The characteristics, as they are measurable, provide criteria for classifications that are unmistakable and final. The lines between the categories are cleanly drawn, so that a marginal case is a great rarity, calling for a redefinition of the terms involved.

To anyone acquainted with the clarity of scientific classifications, further description will be unnecessary; to anyone without scientific experience, unintelligible. What can be said about the clarity of nonscientific classification? Surprisingly, the case is not always desperate. Mr. Richards in lamenting the imprecision of "the sphere of random belief and hopeful guesses" (see *Material Fallacies*) allows that there are "rules of thumb" in "the concrete affairs of commerce, law, organization and police work," and speaks of "generally accepted convention" being helpful there. He is not interested in these fields, but let us see what these conventions and rules of thumb are like.

If your bank sends you a statement reading, "Your account is overdrawn," you know exactly what evidence will render this sentence true or false. You know the conditions of the category of overdraft: subtract your withdrawals, plus charges, from your deposits; if the figure you get is minus, the sentence is true; if plus, false - supposing neither you nor the bank keep inaccurate records. Thus the category "overdraft," like scientific categories, is defined in terms of necessary and sufficient conditions: you are overdrawn if and only if the figure determined as above is minus. Many commercial expressions are far from vague.

Mr. Richards also exempts the law. It is true that the legislatures and the courts make a great effort to define legal categories so that the characteristics of all the basic classes can be accurately determined. "The people of the State of N. charge that on or about 7:00 P.M. EST, October 5, 1957, at 100 First Street, City of X, County of Y, the accused committed an act of burglary, to wit..." The dates and times, the names of the people and places, are of course almost always unmistakable. What of the category of burglary? This is determined exactly enough for all but rare cases. A court applying common law will instruct the jury to find the accused guilty if and only if the prosecution has proved that at the times and places specified the accused did in fact:

- a. break and enter
- b. the dwelling of another
- c. in the nighttime
- d. with intent to commit a felony (not necessarily theft).

All these four elements are, in turn, defined to make each concept as precise as possible. To "break and enter" refers to any entrance without authority even though no door or window is moved and even though the accused only reaches in with an arm or hook; "dwelling" refers to any place of abode and its immediate outbuildings; "nighttime" receives a statutory definition as so many minutes after sunset; while felony is generally defined by statute as applying to any act punishable by a certain penalty, commonly over one year imprisonment. The trial will involve attempting to prove that the accused committed certain acts (as specified in the dots following "to wit" above) which fall within the legal category of burglary.

But legal categories, since crime and other social relations can be exceedingly various, are sometimes unfortunately vague. Many problems do not lend themselves to crisp definitions even though jurists might be willing, as with the case of separating day from night, to adopt an arbitrary definition for the sake of clarity. Sometimes it is not helpful to press for arbitrary definitions, since they would not be useful in solving the problems. For instance, "negligence" or the establishment of guilt "beyond a reasonable doubt" cannot profitably be defined in an arbitrary way. In law as in less rigorous fields there are categories that resist either reduction to particular cases (precedents) or precise definition.

Let us turn from the fields of law and commerce to Mr. Richards' area of "random belief and hopeful guesses." It must be admitted at once that many important constructions are relatively very vague. Particular instances may be instructive.

1. Peter is bald.

The construction *bald* is vague. Let us see just in what the vagueness consists. It is possible to construct a scale from one extreme condition of a man's head to the other:

bald				?			hairy-on-top	
x ₁	x ₂	x ₃		x ₄		x ₅	x ₆	x ₇

In the every-day situation represented here, people use the term "bald" without knowing at precisely what point they would be unwilling to call a man "bald." For x_1 there is no doubt, and his dome shines afar. For x_2 and x_3 only very charitable persons would hesitate to employ the description, though there may be a fringe and a combed-across wisp. As to x_5 , there is a good thatching over, albeit a little thinning in front. But x_7 ! His hair springs up, it seems, from every possible minute spot: you feel there is not room for another hair, and nobody would call him bald. What about the wide range where x_4 is? Well, people may say that x_4 is balding, getting bald, losing his hair. Some actually say that he is bald.

If "Peter is bald" is a case of x_4 , then there is a broad range of possibilities concerning the condition of Peter's scalp. Moreover, the borders, so sharply drawn on the scale, are in doubt. Some users of the term might not distinguish between x_3 and x_4 . Other users might not distinguish between x_4 and x_5 , as we have.

Is this vagueness an insurmountable disadvantage? If it were to become important to know for every man whether or not he is bald, scientists could certainly set up one arbitrary line in the middle of the scale somewhere. They could say: "bald if fewer than 5000 hairs on the head." But note, if it were important, the importance would surely lie in a tie-in with something else, artistic ability, say, or mathematical genius. In such a case, the arbitrary number of 5000 hairs might be no help at all. The definition of baldness would depend in part on the proved relationships to the tie-in, and scientists would draw the line only where evidence of connection with genius or the like warranted doing so. Again, that evidence might not prevent a rather vague border.

The possibility of precisely setting limits is not the important thing about the usage represented by (1). Though at the present time nothing much would be gained by setting such strict limits, it is still possible to use the term "bald" in a very definite way. In the case of x_1 , as contrasted with x_7 , the difference is striking. Avoiding, then, the vague range and staying well to the extremes, a careful speaker can say "Peter is bald" and communicate very effectively to those who know Peter. At the same time, the speaker does not exclude the possibility that Paul, who may have quite a number of hairs compared to Peter, perhaps is also bald. The speaker leaves Paul's case open. Obviously, it would be a very narrow view of the function of the categories of description to deny the right to say that Peter is bald just because one cannot say whether or not Paul is bald (but see #11).

This consideration enables us to give a sufficient condition for deciding when a term is too vague for reasonable communication. We shall say that *when there is no clear case, no x_1 on a scale, then the term should be rejected for vagueness*. It will be evident that many constructions of the language pass this test. In spite of areas of vagueness, there are cases where nearly perfect communication is possible. "Child" and "redness" are quite precise enough for the needs of ordinary communication. Other constructions are becoming more clearly defined day by day. With the application of statistical analysis, the refinement of observational techniques, the discovery of linguistic and semantical principles, informed speakers today are in a position to make many judgments with a degree of intelligibility that would have been impossible only a few years ago. Despite its conceded limitations, I.Q. measurement provides a more exact description of mental ability than vague terms such as "capable" or "bright." Let us take another instance for the purpose of exploring the application of the rule for excluding vague terms.

2. Chivalry implies the ideal of womanhood.

There are here two constructions, *chivalry* and *ideal of womanhood*. Certainly these constructions are vague to the point of being diaphanous. The borders of the concept are almost hopelessly fuzzy. Can such constructions be excluded by the rule? One feels that (2) is saying something; it is not mere nonsensical mouthings. In fact, sentence (2) itself provides some help: any likely elements the speaker includes in the construction of chivalry apparently will be related in some sense ("implies" is a very vague term in common usage) to elements in *ideal of womanhood*. But the latter is no less vague than *chivalry*. Still something is gained.

What of the technique of reduction? Clearly this technique will not work unless there are some clear-cut particular instances. What particulars would all users agree upon? In the case of bald there would be no reasonable doubt about x_1 , though the term does not reduce as readily as other abstractions, such as "redness" - it passes the test. Would informed users of "chivalry" unanimously regard this deed of Sir Lancelot as germane? What of this decree by King Arthur? Or, more generally, this practice of wearing a lady's colors in tournament? This body of amorous song? This search for the Grail?

Probably not unanimously. Nevertheless, a conscientious historian could specify certain feelings, beliefs, attitudes, as they reflect themselves in various language samples and cultural practices and weave themselves in and out of medieval institutions, such as courtly love, and thus roughly specify the development of chivalry in the history of the Middle Ages. The historian's difficulties are legion in such an enterprise, but they are in degree surmountable.

As the term exists in the common language, it is to be ruled out by the condition for excluding vague usages. But this is not to say that it is entirely meaningless. What happens when the speaker of (2) intends an observation about behavior of today? When this is the case, how is (2) to be interpreted? Presumably the speaker can refer to feelings, beliefs, attitudes, and the like, which resemble the historian's construction called "chivalry." In the common usage, as opposed to the careful

historical usage, it would seem that such terms as "chivalry" merely point in a direction. It is as if one gestured casually to the north when asked where Nome is. Even a general direction is something, and there is no occasion to condemn the common usage of terms represented by "chivalry." But in responsible discussion, one can expect something more. In the case of the speaker of (2) referring to today, he can be reasonably held responsible for a knowledge of some historical specifications and, moreover, for a list of contemporary developments which he has in mind when speaking of chivalry.

One thing remains to be noted about sentences of the type represented by (2). This is the danger of reification (see #9 a). Language encourages its users to suppose that there exists a structure corresponding to the constructions named, that there is a kind of Platonic entity in the nature of things. A term like "chivalry" names, of course, the construction of the users, but people feel that their construction more or less corresponds to strands of reality. Instead of saying that speakers and writers construct a class by relating one cultural or social phenomenon to another and calling it, for convenience, "chivalry," some speakers tend to suppose that strands or structures of in-themselves-related phenomena, however poorly realized in any actual place at any actual time, have a basic reality which men perforce notice and name. It is natural to assume that the way to achieve a sensible notion of such a term is to study, yes, the actualizations of the ideal in its poor embodiments in France and England, say, but at the same time to hold in view the pure concept itself.

Yet chivalry can be used by conscientious writers and speakers. They do not have to suggest a reified perfection crudely embodied in some Medieval institutions. They can realize that they are exploring a construction-for-convenience of cultural attitudes or practices, and the like. As to the vagueness of such terms, what is required is that one designates the particular instances intended. Presumably these will lie in the "direction" of the common use. If this is done carefully, the speaker can be as clear as he needs be for communication. Finally, there remains to be discussed a class of usages which have been called vague from the earliest times.

3. Man pursues the good.

Value terms are an instance of terms that resist reduction, in spite of heroic efforts on the part of recent writers. (They may have been the instance that led Plato to his theory of ideas.) "Man pursues the good" illustrates a use of "good" so far impossible to analyze. There are indeed many uses of "good" that can be reliably reduced or that can be translated, without loss, into a group of sentences not employing "good" or its synonyms. "That is a good design" translates into a sum of sentences about the adequacy of the design, its economy, qualities it has that many people find pleasing. If the condition is added that "good," as well as describing such things, also expresses the approval of the speaker and invites an appropriate attitude on the part of the listener, then the result is a sort of translation for "good" in "That is a good design," that few will object to. Like many other abstractions, it turns out to be a short-hand expression for something complicated, but not impossible, to spell out. Similarly, if one says, "Money is a good," it is possible to reduce this meaning of "good" (as in "goods") to things desired by people. If one should say, with Aristotle, "It is a good to have a good," restatement would yield, without much loss of content, something like "People feel a satisfaction in the having of something they desire as well as in the thing itself." A great many usages of value terms can be analyzed in this way, but almost certainly not all of them. Dewey and his school seem in error when they suggest that all usages can be so analyzed because most can. There still remain uses of (3) in ethics and religion that do not yield to reduction.

Can we say of these cases that they are so vague as to be useless? Well, we shall not say so, in spite of the condition of exclusion. Let extreme positivisms legislate as they choose, few will obey them. For our part, we prefer to hope that analysis in years to come will teach us the secrets of these terms.

In conclusion, we can draw together the tentative findings of this section. People are always making new classifications, tinkering with old ones. The best we are able to suggest is a few rough and ready rules to follow in making or testing classifications, rules which a careful arguer employs. As we saw (see #8), a classification must be able to separate elements of the situation. The rules of classification can be observed only if the characteristics are given, at least implicitly, in a way clear enough for others to apply them and come up with the same results. This will not be possible unless there are at least some indisputable applications of the construction, as with the case of baldness, or unless the user of the term gives it such applications himself by pointing to unmistakable examples of what he has in mind. Let us summarize these observations.

1. *Peter is bald.* The unmistakably bald person is called "bald" by all users of the conventional term. Despite some borderline cases, the construction is useful. If Peter's case is marginal, it can be dealt with by further description: "getting bald," "thinning at the temples."

2. *Chivalry implies the ideal of womanhood.* The sentence points in the general direction of certain (or uncertain) feelings, beliefs, and attitudes. The terms can be employed where a mere indication of such general meaning is sufficient, that is, where the notions are not crucial for the discussion, as when the speaker is merely blocking in a background. Otherwise the speaker must show by citing instances some clear applications.

3. *Man pursues the good.* The meaning of such statements is beyond our analysis. However, note that other uses are serviceably clear: the speaker of "That is a good design" considers that the instance before him carries out effectively the principles of design. (These principles and their application to the given case can be explained on

demand.) This use of "good" is not hopelessly vague, though there may be an ambiguity with ethical and other uses of "good."

Apparently the vague usages in question are approved for argument? Not exactly. The qualifications are important. Let us gather them together:

- a. a merely directional use of such terms as "chivalry" is permissible only when nothing central to the argument hangs on it.
- b. vague terms in argument may be employed in a crucial place only when there are clear applications and these are the cases under discussion. If a marginal case becomes important, then a satisfactory decision must be made for this case.

When arguers make up new constructions and give them new names, they often specify the application with care and clarity. If they neglect to do so, someone will sooner or later find a counter instance and explode their balloon. But when arguers use the old abstractions, like "chivalry," which designate constructions very vague indeed, being merely general directions of use, then they are in danger of getting into such trouble that even finding a clear counter instance would be a real help. They do not know the borders of the construction, but fail to observe that they do not know them - after all, "chivalry" occurs in the language and is defined in the dictionary. They cannot disentangle the various characteristics; they have notions of two or more unrelated strands of phenomena floating in their constructions, like letters in alphabet soup. These vague abstractions can be illustrated from almost every conversation, every popular non-fiction book, every student paper or speech, many a lecture on literature, history, social science.

EXAMPLE	COMMENT
Dialogue overheard in the Forum: First Citizen: I don't want war, but I do want our lost territory back. Second Citizen: Well, friend, do you want the lost territory back even if it's going to take a war to get it? First Citizen: I don't want war, as I say. But if it's going to take a war to regain the lost province, then we will have to beat our plowshares into swords. Second Citizen: I see what you mean. You don't regard war as a good thing, but you want to regain the lost province even more than you want to avoid war." First Citizen; I guess that's right.	Second Citizen has pressed this dialogue to clear up the vagueness of First Citizen's assertion; the reply reveals the relative intensity of his "wants." Vagueness in the common language is nowhere more pronounced than in the case of words designating choices: "want," "desire," "hope for," "like." These can range from the slightest predilection to the most intense. Consider the range of meaning possible in the simple assertion "I like ice cream." I might be affirming my preference for ice cream over any other food, or I might mean that only cream pie and tapioca pudding stand lower in my order of desserts. Vagueness arises from failure to limit the range of choice-words: "I like ice cream best of all."
A grocery company was indicted under a statute making it unlawful to charge "unjust or unreasonable" prices. The attorneys for the defendant argued that the statute violated the constitutional provision, "In all criminal prosecutions, the accused shall ... be informed of the nature and cause of the accusation." The court upheld the defendant's contention since the term "unjust and unreasonable" did not reduce to clearcut acts so that an individual would know in every case whether or not his contemplated act would be a violation of the law. (Example founded on <i>United States vs. L. Cohen Grocery Co.</i> , 1921.)	Barring vague descriptions of crime is one of the protections for individual liberty enjoyed where a rule of law prevails. Fairness to individuals requires that the terms of the criminal law be so phrased that there can be no doubt as to whether or not an act is illegal.
A literary quarterly publishes an article arguing that "responsiveness to the Zeitgeist" is the chief mark "of genius of the true poet." This is in the first paragraph. On the second page we read "Artistic sensibility always reveals itself in a fresh wonder at language."	None of these constructions is intelligible, and the sentences are nonsense. Terms like "Zeitgeist" and the dogmatically positive use of "reveal themselves" suggest, moreover, a strong leaning toward Word Magic (#12).
Professor Peter lectures his class in sociology: "The matrix of cultural usage provides for the necessary safety valve of a few non-conformists. The deviates, however, must conform at least to an accepted-rejected pattern of non-conformity. They may be non-conformists only in a prescribed way: not all patterns of nonconformity are open to them."	Professor Peter is probably trying to say something, maybe something interesting. But there is a difference between paradox and open contradiction, and the difference often reveals almost at sight the difference between intelligible constructions and the kind of vague thinking that leads to the verbiage of the pseudo-scientists. One would like to bang Professor Peter's heads together and make him talk sense.

<p>"Give to the Midgets' Rest Home. You can take it off your income tax."</p> <p>"Relax your tired blood. Take Elixir of Ambrosia."</p> <p>"Panty Waists are tighter."</p>	<p>Without such vagueness modern advertising would be impossible; it's of the essence. "Take it off your income tax" can, in law, mean only "take it off your income before computing the tax, if you use the long form and not the standard deduction for charity, local taxes, etc.," but you are not supposed to think of that. "Tired" is so vague in everyday usage that it seems hardly a metaphor to apply the adjective to blood, but what can it mean? "Tighter," "better," "smoother," "longer lasting," "less fattening" - than what? "Better," perhaps, than the worst in the field?</p>
<p>"-ism"</p> <p>"-ist," "-ite"</p> <p>"-er"</p>	<p>It is superfluous to illustrate the tiresome exploitation of these vague formations. In political controversy, a "communist" can be anybody from a card holding Communist Party member to a patriotic clergyman who twenty years ago foolishly allowed his name to appear on the letterhead of the American League for Peace and Freedom. "Peter is a Morrisite," "Peter is a deceiver." Do these mean that Peter once deceived or habitually deceives? that he agrees with Morris on some particular, or that he follows him around day and night like a disciple? The use of these formations in argument brands the speaker as naive or vicious. Look back to the previous sections. Do such terms as "relativism" or "reifier" offend against this principle?</p>

11 Over-precision: "logic chopping"

Some persons, apparently impressed with the rule of reduction and other modern techniques, would reject the extreme-case criterion for permissible vagueness as far too generous an application of Rule 4 (see #10). It is not enough for them that all would agree on x ; there must be agreement on all cases in the range. That nobody is likely to deny Peter's baldness does not qualify "bald" for precise usage unless unanimity is also possible on Paul and Henry, whatever the state of their scalps. Some writers blame the vagueness of terms in common usage for an alleged lack of progress in social science and for much of the confusion in politics and other activities of everyday life. They demand of every general term that it carry with its use the method of its reduction. As to marginal cases, they are to be eliminated by formal definition or by exact distinction.

Vagueness, they say, encourages reification and Word Magic (see #12). The existence of a certain usage in the language does not guarantee anything about any entities in the world. The name "Zeus" is a proper name, but there is no god. The difficulty with "the good" or "chivalry" is that the use of these terms often commits the speaker to a belief in Platonic entities, since the tendency in language to give some content to words leads speakers to reify when no content from reduction is possible. Moreover, a belief in a Platonic super-child does not matter for communication: the term can always on demand be reduced to this young person or that. But abstractions such as "chivalry" cannot be reduced since the concept is not well enough constructed to permit its users to state the conditions for applying it. They can, of course, provide an ad hoc definition, but then they might better have avoided the term altogether and with it the confusion with common usage and its likely reification.

For these reasons the extreme-case criterion is held to be too broad. It is not enough to eliminate the merely directional usages of terms such as "chivalry," but such terms as "bald" must also go. The fact that there are clear-cut cases misses the objection to vagueness in language: this is that there are any cases not clear-cut. Let speakers adopt the practice of defining each term as it occurs: this will eliminate marginal cases as they arise. There is no reason to put up with indecision about them and to tolerate vague uses. So goes the positivist argument.

Most of these strictures are directed against the vagueness in certain social sciences, psychology, sociology, history. Many of the key concepts in these sciences seem to the critics merely evaluative and literary. Can psychologists precisely state the characteristics of projection, of repression, of sanity itself? On the contrary, they are unable even to specify the level of abstraction for these constructions, much less show how to reduce them to particulars. Can any anthropologist state with clarity the conditions that will indicate for every human trait whether or not that trait is "culturally determined?" These criticisms imply that it is always desirable to give precise rules for the usage of terms, and that it is always possible to do so.

Sigmund Freud and Margaret Mead could, indeed, define their terms and be done with it. The definitions would perhaps be arbitrary, but they could be clear. But what is the problem such writers face? Is it merely to define, say, "repressions," that is, to provide an exact list of characteristics by which psychologists can judge whether or not any given human activity can be arbitrarily designated "repressive"? Or is it to explore a situation believed to involve a basic psychological mechanism?

Reflection will show that the task of the scientist here is not to set up artificial systems, but to found tentative constructions on the description of some clear (extreme) cases. In the bewildering complications of fact, these early constructions may be found ultimately to be as basic as was originally thought - in which case they will by degrees become entirely explicit and uniquely determined in scope - or they will be found unproductive - in which case they will be discarded or replaced. In the meanwhile, the investigator is usually aware of the vague and tentative character of his key concepts.

It is a form of perfectionism (see #38) to reject the best available on the grounds that it is not the best conceivable. What is happening seems to be a rejection of serviceable usages for the sole reason that there are cases that are marginal or doubtful. We have stated that the function of classification is to separate, and the criticism of the marginal case seems well taken. How can the rules of exhaustion and exclusion operate if the construction is littered with doubtful cases? But we have also stated that where these are crucial they must be decided. We now add that this decision can be recognized as tentative where a formal division would not further the understanding of the situation, but on the contrary would be arbitrary and artificial. In a discussion where the marginal cases are not at issue, it is capitious to reject a construction simply because such cases exist. This amounts to refusing to allow the term "bald" when Old Marbletop is being pointed to, simply because there is a gent, Old Brushacross, who is nowhere around.

In such instances we say that the criticism is fallacious. There is nothing wrong with the extreme-case uses of construction, when the alternative (" 'bald' means 'fewer than 5000 hairs on the head'") is purely arbitrary. If there are some clear cases, as with "baldness," "repression," "culturally determined traits," the historian's "chivalry," then the uses are permissible unless greater precision is possible without artificiality. This is admittedly itself a vague criterion of permissible vagueness, but it must serve the present purpose - which is only to characterize the fallacy of requiring an unnecessary precision. The fallacy is easily recognized in its extreme forms: wholesale rejection of vast areas of human inquiry as "nonsense," pedantic hair-splitting and logic-chopping over constructions that are the best available and good enough for the purpose, the ironical bark in discussion, "I can't understand that!" "What does that mean!"

EXAMPLE	COMMENT
<p>Professor Peter writes in the <i>Historians Quarterly</i>, "It is bad enough to see this term romantic in undiminished circulation amongst music critics and literary historians. What does it mean to characterize Beethoven's Opus 28 as romantic? Or Byron's Don Juan? The sonata contains the notes, chords, movements it contains. How can these add up to some non-musical entity to be designated as 'romantic and thus automatically grouped with Don Juan, as well as with Gothic revival, the agony of a perverse love, trap doors and ghosts? But when an historian, who should know better, seriously sets out to specify clear-cut, extreme cases of the romantic impulse in diplomacy and political agitation, then we have seen everything. I can only say that Professor Paul's latest tome may be program notes or literary obiter dicta, but it is hardly history."</p>	<p>It is true that terms such as "romantic," "classical," even Professor Peter's "history," are frequently used in literary and popular contexts in a merely directional way. No precise content can be given to them, and it is not even clear if there is an extreme case. Yet Professor Peter's attack itself refers to fairly definite areas of content (trap doors, ghosts) - almost all literary critics agree in regarding the appearance of Gothic props in novels and poems as marks of what they call the romantic movement. Moreover, Professor Paul apparently is at pains to find "clear-cut, extreme" cases of practices in diplomacy and politics which he is proposing to call romantic, since they lie in the general direction of what is ordinarily called "the romantic movement." At any rate, he must use some term to cover the phenomena he is describing, and all that can reasonably be required is that he provide some clear cases, even if he must leave it open whether or not other cases are to be so characterized.</p>
<p>Overheard in a bull session: "You say that whatever morality involves, it's bound to include people helping each other in time of need. You cite rescues at sea and loans to friends, even considerate advice to troubled spirits. This is the way all you moralists talk. You list noble deeds that, of course, everybody approves of, then treat them as if they were a class of similar things, give them a name, like "helpful," and think you have proved something, I don't know what. All you have done is cite cases, which may or may not have something in common, and wrapped them up in a vague meaningless name. I still don't know what it means to be helpful, and I don't think you do. Look! What if the man at sea were dying of cancer and didn't want to be saved, or if your alcoholic or whatever didn't want your advice - maybe he needs his vice, not advice! How would it be helpful to interfere then? Answer me that!"</p>	<p>The providing of particular cases was apparently designed to free the term "helpful" of some of its every-day ambiguity. The critical attack does attempt to test the extreme-case instances by imagining counter-examples, but even though such may occur, surely there are many rescues that are desired just as eagerly as the rare one is not. The intention obviously refers to such cases. Is the designation of such cases as "helpful" unjustified? It will be noted that the critic seems himself to have derived from them a clear enough notion of "helpful" to pose counter-cases; he asks, "How would it be helpful to interfere?" If he would accept the term as now specified in the light of rescues, advice, loans, the critic might then find out what his interlocutor thinks he has proved - presumably that being helpful is a moral good.</p>

12 Word Magic

In the discussion of classes we saw that the existence of a name does not guarantee the existence of any corresponding entity in the situation. Suppose you start with a construction, say a fairly clear one like child. The name "child" means the construction child, right enough, but the point of the analysis was that there is no need to suppose that the construction child stands for a Platonic entity in the world. This is to say that, by the process of reduction (see #9 a.), you can interpret the construction child in ordinary usage by reference to Junior, Sis, et al, and do so without committing yourself to a belief in a child in Plato's heaven, who never grows up, whose hands are never in need of washing, who is parentless and sexless. Reduction is possible in principle for even the highest level of abstraction; even the use of vague terms, like "chivalry," in careful contexts, need involve no reification.

There are other terms, however, the use of which usually implies the existence of entities in the situation unverifiable in principle. The usual occasion of the use of such terms as "destiny" and "fate" provides no clue for reduction and strongly suggests hypostatization of entities. Such use is commonly called Word Magic. The name, like a spell, conjures an Entity into being. In recent years much attention has been paid to Word Magic, and this phenomenon of language has become an important part of the much discussed "tyranny of words." There has, however, been a certain vagueness in the notion of Word Magic itself. Most writers seem to include every sort of reification and make no distinction between reified uses of, say, "child," and of "destiny." At other times writers seem to include all constructions not firmly anchored in the situation, such as an infant's notion of Santa Claus, and thus indifferently regard simple mistakes due to ignorance of "the furniture of the world." as instances of this fallacy.

We shall want to use "Word Magic" in a less vague way. We shall exclude cases of ordinary hypostatization, where the constructions, such as child or red, can be given a straightforward analysis free of metaphysical commitment. We shall also want to exclude mistakes due to ignorance. Sentences about centaurs, elves, ghosts, cannot be reduced, it is true, but they do not essentially involve reification of entities - for they might be uttered in good faith apparently on good authority and constitute simple mistakes. Perhaps we have already sufficiently discussed reification. We want, however, to take a look at the centaurs and ghosts. But let us first consider the following case.

a. The Average American smokes 7.472 cigarettes a day. Only a very naive person would suppose that "Average American" designates any class of people, especially people so carefully measuring their consumption of cigarettes. Those who are not so naive know that there may in fact be no one person who smokes exactly 7.472 cigarettes every day, or any day. They will know how to interpret such idioms and the sort of evidence that will confirm or falsify the generalizations. A mistake here is due to ignorance, but the ignorance differs from the example (c) below about the centaurs. The ignorance here is of a rather ordinary convention of language to give a shorthand summary of complicated factual material, rather than ignorance of the kinds of things there are in the world.

b. The centaur is a mythical beast.

The logical analysis of this sentence, which needn't detain us here, shows that, though it probably seldom misleads, it is still a misleading way to speak. The use of "is" where there is no reference to existing things can get confused with the use of the term to imply existence, and hence is misleading. The sentence, "The President is an elective executive," states that for every case where somebody is President he is an elective executive and, moreover, there is such a case. Sentence (b) is of the same form, but can one say, "For every case of centaur, this is a mythical beast, and there is such a case"? Well, it is only the form that is misleading, not the sense, since the form is contradicted by the sense (of "mythical").

c. "The centaur is half man, half horse."

Unless the context contradicts the form of this sentence, there is nothing to show that the construction centaur is unanchored, that no referent can be found in the widest situation known. Now suppose this sentence were to be found in a medieval travel book and that you are a student in a little cathedral school. If you believed this sentence to be true, that is, that "there is such a case," would you be guilty of Word Magic? One does not quibble over the use of this term if he points out that the chief mistake you have made, at the worst, is a reliance on insufficient authority (see #15). You have not traveled yourself over the world - how do you know what animals are in it? Unless you have deduced a priori (see #28) that centaurs are impossible, the most that one can expect of you in your ignorance is a certain skepticism. In the Middle Ages - and in many other times and in many places - people have made mistakes of this sort. They have eaten the horn of the unicorn ground up. They have fed rice cakes to ghosts. They have kept the werewolf from the door with wolfbane or garlic. They have burnt witches. They have trapped demons in trees and rocks. These practices involve magic, but, as we shall use the term, not Word Magic. The spells and other linguistic incantations seem a consequence of a mistaken belief in something, rather than the other way about. The belief is theoretically verifiable. We may never encounter a centaur or a werewolf, but we should certainly recognize one if we did. Let us take another case.

d. Phlogiston makes the fire burn.

Chemists have found no "principle of combustion," in the sense that Newton found a principle of attraction. The problem is not the name "phlogiston." If there were such a principle - every case of combustion involved its operation just as every case of the attraction of bodies involves gravity - the name "phlogiston" of course would serve as well as any other. Yet the

existence of this name has apparently led astrologers and mystics to state that the chemists must be wrong, that fire must be a uniform element in nature, that there must, therefore, be a uniform principle involved in all combustion. To this day arguments to this effect can be found here and there. With this use of "phlogiston" one enters the presence of Word Magic. No longer can simple ignorance excuse. The fallacy here occurs only in comparatively rare cases where the existence of the word magically guarantees the existence of the entity: we have the name, let's find the thing. This is like the celebrated case of the genius who argued that opium must put people to sleep by virtue of a "dormitive agent" and set out to find that agent in all cases of soporifics.

The situation being what it is, no unique principle of combustion, no unique dormitive agent can be found. Looking for one in advance of knowledge of the nature of things is not a fallacy. Persisting in the search after the situation is understood, simply because of the existence of the name (or, of course, of a useless construction, whatever its name) we call Word Magic.

We come now to usages that automatically involve Word Magic.

e. It was Peter's destiny to build houses.

How can this sentence be confirmed or disproved? If Peter dies without building a single house, we might inscribe on his tombstone: "Here lies Peter. His housebuilding destiny was unfulfilled." Or if Peter dies after building fifty houses, we might then write: "Here lies Peter. His destiny was to build houses, and he built fifty of them." The very sense of such terms as "destiny" is that no verification of sentences of the sort of (e) is possible. The clause "he built fifty of them," does suggest a sort of evidence, but it is easy to see that it is not a condition of having a destiny to build houses to have actually built a number of them. This is made clear by the usage about a destiny being unfulfilled. Take the case of "Sylvester has luck at the races." If this means that Sylvester encounters a higher instance of successful bets than normal expectancy promises, then the sentence amounts to a shorthand way of saying a rather complicated thing. But the practice of touching wood, wearing special colors, compulsively avoiding certain locutions - all these suggest that, in our culture, more is meant here than a mere shorthand expression. If the speaker uses "luck" to mean a force in the world which is, at least temporarily, on Sylvester's side, does this usage not deceive him into entertaining a thesis which, the world being what it is, is in principle unverifiable? For (e) you might try, "Peter had an interest in building construction and in residence contracting." This is a less picturesque sentence, but at least the conditions are known under which one is willing to say that a person has an interest in doing something, even when he is prevented somehow from doing it. But if your interlocutor is unwilling to accept this or another verifiable paraphrase, if he says something like, "Yes, of course he had an interest in it, but he also had a destiny to do it, I tell you!" - if this is the best you can get out of him, then you can only tap on wood and cast a counterspell.

All such cases differ from ignorant mistakes about what the situation is, in that they cannot be falsified. No amount of evidence can reach them. Thus they can be separated from sentences about centaurs and ghosts. They have it in common with reification that they imply metaphysical presuppositions, but differ from these in that no alternative interpretation is possible in the ordinary occasions of use. Child can be analyzed by the rule of reduction to escape any metaphysical entity, though the Platonist will not accept the reduction. But with "destiny" the construction the term names cannot be reduced. Word Magic, then, is that instance of reification where there is no alternative non-metaphysical interpretation and where the construction cannot be verified or falsified in principle.

This is the last fallacy we treat under the general heading of material fallacies. When mystics go so far along the line of Platonism as to persist in using terms that can be given no reference at all to any known situation, it is obvious that psychological factors are involved. We might more wisely have placed this fallacy in the next section, where everything is tinged with magic or, alternatively, where most of the language is incantation. We would have done so, except for the obvious connection with reification. Even in discussing that fallacy, the prime example that suggested itself was the case history of an insane man. But at least the poor fellow had some evidence to support his belief that a secret power was after him: he produced detailed accounts of how this power was operating (see #9 a). In the case of Word Magic and in many of the cases in the next section of this book, the psychology seems entirely unhinged. This is the witches' coven, the necromancer's magic 73 square. It is the arena of babbling and madness. It is, in short, the everyday world of leading articles, politicians' platforms, TV commercials, and common gossip.

EXAMPLE	COMMENT
<p>On February 24, 1920, when National Socialism was an obscure movement, a meeting was held during which the Party Program was announced. The size of the audience and the enthusiasm for the Program exceeded Hitler's most sanguine expectations. Hitler uses the following language to describe the thoughts that he says ran through his head as the audience filed out of the hall:</p> <p><i>A fire had been lighted out of whose flames in time to come a sword was bound to arise that should win again the freedom of the Germanic Siegfried and the life of the German Nation. And beside the coming upheaval I felt strode the goddess of inexorable revenge for the act of perjury of November 9, 1918.</i></p> <p style="text-align: right;">—Hitler, <i>Mein Kampf</i></p>	<p>Notice some general things about this passage. It is highly metaphorical, it is impassioned, it is even inspired. There is nothing particularly reprehensible about being impassioned or inspired, if a writer can sincerely achieve these states as Hitler probably did on this occasion. As to metaphors, figurative language does not of itself involve special difficulty. The metaphors can often translate to prosaic statements; these may be flat and involve a loss of emotion and color but perhaps no loss of substance, if there is any substance. Let us take a closer look at a few of the particular expressions here.</p> <p>1. "A fire had been lighted out of whose flames in time to come a sword was bound to arise..." This translates to something like: "A movement had been started, and out of this beginning there was bound to come some day an armed political power." Here it is not the metaphor but the notion of "bound to" that causes difficulty. "Bound to" suggests inevitability. The laws of gravity obtaining, if you drop an apple it is "bound to" fall. The expression suggests the operation of a law of nature. But there is nothing in the knowledge of political or social nature that could constitute evidence that the acquisition of power is ever inevitable. If Hitler had been killed by a bus on his way home from this meeting, or if any of a thousand other quite possible contingencies had arisen, would the National Socialist Party nevertheless have been bound to acquire power in Germany?</p> <p>2. The words ". . . to win again the freedom of the Germanic Siegfried and the life of the German nation" are also metaphorical. They presumably mean something like "German freedom and prosperous unity." These are the things that are going to be "regained" by the power that is bound to come from the beginnings of the movement. It is readily conceivable that a strong political movement could restore freedom of action to a nation and help it to unity and prosperity.</p> <p>3. What is the "goddess of inexorable revenge" who is now walking about? Revenge is an intelligible concept; it means something like a consistent motivation to pay back evil with evil. Perhaps the goddess is the embodiment of that motive in Hitler, or even, so to speak, in his movement. But what can be inexorable about a motivation? The word "inexorable" applied to human motivations shows that magical abstractions can be adjectives, as well as nouns like "destiny," just as "bound to," used in similar situations shows that verbs are also available for concocting spells of Word Magic.</p> <p>4. The date November 9, 1918, makes it evident that by "act of perjury" Hitler is referring to the proclaiming of the German Republic. At least, that is when the Republic was proclaimed. Whether one approves or disapproves of this action, there is no chance that it can be taken literally as "perjury." "Perjury" is lying under oath. It is hard to understand what metaphor occurs here. The likely thing is that the term is simply extended, for its emotive connotations, to mean the public act which the speaker detests and wants his audience to reject.</p>

<p>Peter, a docile follower of the party line, declares, "The dialectic of the class struggle requires the inevitable overthrow of capitalism."</p>	<p>This example is similar to the first - compare the use of "inevitable" with Hitler's "inexorable" and "bound to." If by "dialectic" is meant "clash of opposing political and economic classes," then the outcome will be decided by the course of events and the strength of the interests involved. If by "dialectic" is meant "the resolution of apparently opposed propositions," this will be a logical exercise, irrelevant to the world of political and economic struggle. Finally, if by "dialectic" is meant some underlying principle of historical development, like Spengler's law of decline or Toynbee's law of response - and this is the way the Marxists and Hegelians talk - then it is another magical abstraction, and there is no point in adducing evidence from history, since none is relevant. This use of "dialectic" and other Marxian terms is not simple reification, since, aside from how Marxians feel about them, there is no way at all to make the constructions available (as the historians can chivalry - see #10) to the ordinary users of the language.</p>
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PART II: PSYCHOLOGICAL FALLACIES

Before an audience of children, a debate about diet between a physician and a confectioner would be won by the confectioner, hands down. Before an adult audience, a politician armed with the tricks of persuasion and versed in rhetoric may overturn an engineer or soldier even though the subject is a specialty of the latter, say the building of defenses or harbors. Persuasion flatters the appetites of the audience and has a great advantage over a cold appeal to reason. This has been recognized at least since the time of Plato, and the above examples are from his famous attack on rhetoric, the *Gorgias*.

It is more interesting for all of us when speakers become excited, when they gush or rant, make us laugh, conjure our sympathy, cozen and beguile us in a hundred ways. "Instead of working on your opponent's intellect by argument, work on his will by motive; and he, and also the audience if they have similar interests, will at once be won over to your opinion, even though you got it out of a lunatic asylum," says Schopenhauer, lampooning the level of public discussion in his day. Sarcasm aside, it is easy to agree with Schopenhauer that a man entering on a controversy "must know what the dishonest tricks are," since he will certainly have to meet them.

It is evident that even a sound argument can still be urged on listeners with all sorts of emotional embellishments and with the help of various psychological appeals. If we are going to mean by "fallacy" faulty reasoning in argument, then these appeals and devices are not real fallacies. Yet, whether or not there is an actual error present in the machinery of the argument, some of these psychological tricks have been listed among the fallacies from the earliest times - such devices as name calling, flagrant appeals to prejudice, flattery, ridicule.

All these tricks are practiced for distraction, disturbance, diversion. They confound the issue, they play up special interest, they rely on appeal and dazzlement. In short, they put people off guard, or by shifting the focus of discussion from a close preoccupation with the facts and their cogency, they seduce to the colorful or dramatic or disturbing. Sometimes the speaker will intend, by letting his audience look up, as it were, from a lengthy examination of the issue, only a momentary relaxation. Such a respite is often welcome. At other times the audience may find themselves led away altogether into watching or participating in vigorous displays or noisome forensics. Without becoming hypercritical of every embellishment and sparkle, we can still learn to recognize these for what they are, an added grace by the way.

EMOTIONAL COLORATION

Playing upon emotion to color the case and distract from a close scrutiny of the issue is the most common of all fallacies. It is present in degree in almost all instances where there is any other disturbance. Indeed, the possibilities of name calling, prejudicial epithets, flag-waving, and the whole sorry display of public emotion are so commonly exploited by all classes of men under all sorts of conditions as to seem a part of our natural equipment, like the ability to laugh and cry. No one needs to learn them. As soon as we begin to converse and to enter upon public discussion, we find ourselves endowed with the knack of generating, as people say, more heat than light.

13 *Emotive Language: "colored words"*

Language has great emotive power. There are several hundred names for the most subtle distinctions in moods and emotions, some ranging from the warmest acceptance to the most resolute rejection, others lying in a rainbow from the complicated attitudes of languor, ennui, and indifference at one end, to wonder and dread at the other. Certain names of emotions have even the power to evoke in degree the states they refer to. "Astonishment" raises the eyebrows a little, while "terror" can raise the neck hairs. "Nostalgia" brings a wistful smile, and "regret" a gentle pained expression.

The descriptions of some emotions or moods also convey attitudes toward them. Consider Bertrand Russell's conjugation. "I am firm." "You are obstinate." "He is pig-headed." "Firm" here is an instance of what the linguists regard as ameliorative connotation, "obstinate" and "pig-headed" as pejorative in increasing degree. Yet these three sentences could refer to the identical situation. Such words as "charming," "kindly," "reasonable," at once designate and praise certain qualities, while "liar," "coward," "fool," designate individuals of certain characteristics and in the same breath condemn them. Some expressions when applied to persons are so offensive that it becomes a matter of honor to resist them. This leads speakers to hunt paraphrases for them, so that "bastard" becomes "illegitimate offspring" and "lie" becomes "mis statement."

It may be instructive to analyze the pejorative term "lie," as it occurs, say, in the sentence "S is a lie." This is a simple sentence, yet it is deceptively simple, since it is true only if it meets each of four conditions:

- a. S is false.
- b. The speaker of S knows that S is false.
- c. The speaker intends to say S.
- d. The speaker intends a hearer to believe S true.

Each of these conditions is necessary. We do not say that a man lies if what he says is true, no matter if his intention has been to deceive - we say he tries to deceive us. Nor do we say he lies, though what he says is false, unless he knows that it

is false and does not say it by mistake. And we will not regard him as a liar, though he knowingly and intentionally utters a false sentence, unless he intends to deceive by doing so - he might be merely employing irony or sarcasm: "Now that was a smart thing to do!" Although each is necessary, these four conditions are not sufficient. They merely take care of the sense of "lie," or the denotation of it. There still remains the connotation. One does not seriously say to a man, "That is a lie" unless one also intends to insult that man or disparage him. For the term connotes contempt, anger, revulsion.

The complexity of the analysis for a familiar term like "lie" illustrates the difficulty of rendering an adequate account of the various functions of language. The expressive and evocative functions are so far from fully explained that the linguists and psychologists have not yet developed any but the crudest tools for investigating them. We hear a little about pejoration or euphemism. We read about "effect modeling" and get the notion that smiling language, as it were, induces us to smile back. Poets talk about a communication of feeling, and propaganda analysts tell of the universal tendency to believe a Big Lie if it is big enough, or the effectiveness of endlessly exasperating a captive audience. We have little reliable knowledge about the emotive function of language, but we have, all of us, a considerable acquaintance with the possibilities. We employ emotive effects with nearly every sentence we utter. "Pass me the bread, Honey." "My, you look swell today." "That old viper!" We choose words in harmony with the emotive meanings we wish to convey. And we observe our own susceptibility to nuance and rhythm and color when we encounter them in the utterances of others. Hans Reichenbach observes, "Language is the most effective tool for interfering in the inner life of others." We use this tool adroitly or clumsily, according to our abilities. Yet we do not understand it. We are like the small boy with the electric train, who knows how to work it but doesn't know how it works.

For our generation, ever since writers such as C. K. Ogden and I. A. Richards drew attention to the importance of the emotive function of language, there has been a tendency to deplore the inevitable accompaniment of imagery and rich connotation as a source of error and unreason. The advance of science has provided many models of precise communication, free of disturbing feelings and tone. Writers have felt that political discussion and other whole areas of human intercourse could profitably follow these models. As early as Plato, in fact, objections have been vigorously urged against the tendency to substitute persuasion for rational conviction. Plato and many since his time have seen the systematic exploitation of emotive function of language as an attempt to obscure sound judgment and pervert truth. Yet Plato himself wrote a noble style.

Today the attack on "colored terms" and the "tyranny of words" is often pressed with great persuasiveness and force. Few would wish to maintain the extreme position that every serious attempt to communicate need resemble a logical argument or a bank ledger. Everyone with an ear for language protests measureless and unrhythmic periods and undramatic arrangement of parts. To say nothing of these subverbal elements, who would wish to deny a speaker the right to choose his language consciously for its emotive connotation? Speeches can be made dull by an unimaginative vocabulary; poetry would be impossible. Fancy transposing:

*The Curfew tolls the knell of parting day,
The lowing herd wind slowly o'er the lea,*

into

*The Curfew sounds indicating the end of the day,
The herd of mooing cows walks slowly over the pasture.*

Sensitivity to the associations of words is a mark of skill in expressing and comprehending ideas. There are times, quite apart from euphony and embellishment, when the truth can be served only by frankly emotive language. This world has its fools and cowards and liars. Shall speakers always find euphemisms? What polite word should Hobbes have substituted for "fools" in his fine sentence, "Words are wise men's counters, - they do but reckon by them; but they are the money of fools"? Label fools as such and don't suffer them gladly. Don't speak of torturers and assassins as "custodians" and "liquidators," or, as Orwell has it, of hate as love, of starvation as discipline, of war as peace.

If a bad ear for connotation leads to absurdity, linguistic cynicism makes a lying use of the emotive resources of language.

Where, then, is the fallacy of emotive language? Fallacy lies in the abuse of the power of words to evoke response. The abuse may occur when a speaker begs the question under discussion by formulas of praise or blame. Or it may gradually arise over a period of time so that no one can say precisely that the fallacy occurs here or here - as when a speaker excretes an atmosphere of passion in which sober talk becomes impossible. Where there is passion there can scarcely be dispassionate examination of an issue. The angry man cannot easily think - nor can the flattered man, either.

Lacking a comprehensive theory of language, we can only observe and experiment. We certainly ought to do so. We can begin with one thing we do know: no study of language can get off the ground if it fails to distinguish between the referential function of words and the power they have to convey mood and feeling. Perhaps one who has learned to make this discrimination will begin to acquire some mastery over language; one who has not learned is captive to a powerful trifle.

EXAMPLE	COMMENT
A commentator harangues the radio audience; "This deliberate plot against the American people..."	Several of these words have powerful emotive connections. "Deliberate" and "plot" are prejudicial: they do two things at once, describe and denounce, like the word "lie." Incidentally, our own reference to the speech as a "harangue" is also prejudicial. "Harangue" is a word chosen to assure an unfavorable judgment, for nobody respects a harangue.
Overheard in a commuters' train: "Suckers and malcontents are always with us, always ready to support visionary schemes to get something for nothing out of the state. That's the way I look at the Desmond Bill."	This is merely name calling.
Comrade Peter, in 1940, wrote of the fall of France as "a prearranged sell-out in this imperialistic war between contradictory forces of the right vs. the right." In 1942, after Hitler had violated his entente with Stalin, Comrade Peter wrote in the same journal: "Martyred France is rising in Resistance to fight on the side of the people's armies of east and west in the war to destroy fascism forever."	There are here actual contradictions in the logical material, though they are more implicit than spelled out. But the striking things about Peter's changed "line" is that each position he takes is reinforced with a cynical and practiced choice of terms to produce the emotion desired.
"Governor Jones stands for freedom, integrity and efficiency in government."	Emotive responses are pleasurably aroused by these words. Propagandists identify this technique as the "glittering generality."
Real estate ad: "You'll enjoy the hearthside charm of this two bedroom cottage. Lovely neighbors, attractive landscaping. All the built-in comforts essential to cultured living. Priced to sell."	Better look for termites yourself.

14 Ceremony or Setting: "pomp and circumstance"

Everyone has found himself roused by military music or by cadence in marching, by bunting and colorful displays. Ceremony is a powerful stimulant, sometimes a Pied Piper leading a people into disaster. Or it may elevate the feelings of the audience, as in a religious service. There is no call to condemn ceremony as such. The color of public occasions is part of the joy of life; it is capable of reinforcing attachment to institutions and ideals. But these should be such as to win loyalty on their own merits - people should give consent, like a bride, for reasons of worth and promise, not for the sake of a public ceremony.

Very different from the inspiration derived from public display is the influence exerted by the setting. The physical circumstances forming the background of an argument often affect the notice the argument gains. The same words uttered by the President before a joint session of Congress and by an acquaintance on the next stool of the Trolley Diner have, because of the difference in setting, entirely different penetrating power. The same salesman will sell more with the same sales-line when he has his hair trimmed and his trousers pressed than when he has neglected his appearance. A change in the appointments of office or a store will likewise affect sales. Yet the President's argument is no better than that of the fellow sitting on the next stool - by hypothesis it is identical - and the same sales pitch varies in effectiveness with setting. Setting covers the physical environment of an argument. It is at worst an embarrassment, at best an adornment; truth stands resolute in both rostrum and soap box. Yet arguments that might be listened to with respect coming from the one may be laughed at when coming from the other.

EXAMPLE	COMMENT
The Nazis fully understood the appeal of pageantry. They made masterly use of the contagious excitement stimulated by masses of men, colorful banners, trumpet blares, parades of troops marching with flawless precision, honor guards standing in motionless files, spirited songs, and cries of Sieg Heil - all this was deliberately organized to stir the emotions of the people, to emphasize the omnipotence of the leaders, and to provide a setting which would make even commonplace utterances seem of deep significance.	<p>On the other hand, the National Socialist meetings were indeed not "peaceful" meetings. There the waves of two views of life clashed against one another, and they ended not with the humdrum singing of one or another patriotic song, but with a fanatical outbreak of popular and national passion.</p> <p style="text-align: right;">—Hitler, Mein Kampf</p> <p>A display of confidence is, in effect, a type of setting. Personal bearing - tone of voice, dignified posture, a candid eye on the person addressed - can make a vital difference to the practical effectiveness of argument. Salesmen, advocates, leaders - all cultivate these attributes in order to gain by the "confident manner." Indeed, not to display at least a moderately impressive personal demeanor is to invite the audience to discount the value of what is said. If they do so, however, they are committing the fallacy of origin (#19).</p>
An Army captain gives a training lecture to his military police unit. "You must outdress every other outfit on the post. People obey orders from those they respect. If you have to reprimand a soldier when you are on police duty, the chances are that you and the soldier will have been total strangers up until that moment. The soldier will size you up by the tone of your voice, by your posture and dress - if these are superior, you aren't going to have much trouble. But if you're sloppily dressed and not snappy in your bearing, then watch out."	The captain is making shrewd use of the fact that men are influenced by setting as well as reason.
Mr. and Mrs. Peter stop with a crowd listening to a street orator. "Let's go," says Peter to Mrs. Peter, "He'd make more impression on me if he had a shave."	Mr. Peter may be expressing merely a reluctance to consider argument from such a source (see #19). As expressed, his reluctance is an instance of reliance on setting - if we can regard a stubbled chin as a setting for a speech.

MISUSING AUTHORITY

Genuine appeals to reason found in speeches or discussions are the bones of formal argument and the flesh of evidence. But discourse is usually more than naked reason; it is adorned with many embellishments designed to persuade or to please. Strictly considered, these embellishments are irrelevant. Practically considered, some of this irrelevant material may be advisable. The speaker will often want to adapt the tone of his speech to the occasion or to the mood of his audience. He will want to show the importance of the issue, to bring home a realization of human problems that may lie outside the experience of the average person. For instance, if a speaker is bent on proving that more money must be allocated for the rehabilitation of juvenile delinquents, he may find it helpful to describe some case histories. Here a good speaker resembles a novelist: he gives his listeners a sort of "knowledge-of-acquaintance" concerning human situations where before they may have had only a detached "knowledge-about" the problems involved.

If this sort of appeal, though logically irrelevant, is practically justified, there still remain many sorts that are not. The appeals described in the following fallacies often serve to take advantage of the ignorance of the audience rather than to overcome it. They play on prejudices and misconceptions instead of meeting them squarely. And one must very often suspect that, unlike some fallacies which are the result of ignorance or carelessness, these appeals are dishonest in intent.

15 Appeal to Authority: "*Ipse dixit*" or "*He says so!*"

In this day of specialization, all men must rely on authority in the fields of technical information. Since no one can be a specialist in everything, even specialists must defer to each other. The mechanic consults the doctor about his health, the doctor consults the mechanic on the maintenance of his car, both consult an accountant when they make out their income tax. In argument, as in everyday matters, it is entirely proper, indeed inevitable, that authorities be called on for information. It is not, alas, inevitable that source material derived from authorities is always used fairly. Source material should be given the weight due to an authority if and only if the source is (a) personally reliable, and (b) qualified as an expert.

An authority is personally reliable in the same way that anybody else is. The chief conditions to watch for in questions of personal reliability are these:

1. There is reason to believe that the witness is telling the truth as he sees it, or at least no reason to suppose he is lying. The witness, for example, is not an habitual liar. If he were, it would be foolish to trust his words even though he might know a great deal about the matters he is reporting on.
2. There is reason to believe that the witness is disinterested, or at least no reason to suppose him swayed by bias. A highly biased or partisan report would convince no one who recognized it as such. Such reports, even from acknowledged experts, usually result in learned confusion at the best.
3. There is reason to believe that the witness is conscientious, or at least no reason to suppose that he has not been attentive to the problem and diligent in gathering data. Casual statements from a witness, however competent, who has been too busy or too lazy to investigate properly, ought not to be regarded as authoritative.

An authority must be qualified as an expert in the field in which he is cited. Expert qualifications show the following marks:

1. The authority is clearly identified. The assertion "A leading expert says..." is a device of slovenly journalism. How can it be a proper appeal to authority? Since the expert is not named, his qualifications cannot be examined.
2. The authority has professional standing. The qualifications of experts are properly judged, not by laymen, but by fellow experts. The standing of a surgeon should be established by his colleagues, not by the size of his practice or by his popularity among his patients.
3. The authority is current. Darwin is a great name in biology, but before relying on Darwin as an authority, one would want to check present opinion in the science. In some fields today the growth of knowledge is so rapid that a few years or even months may suffice to render an opinion obsolete.
4. The authority is expressing an opinion within the field of his special competence. Einstein may have held very worthy opinions on world peace, but he was not to be regarded as an expert on international relations just because of his reputation in physics. It is of course possible - and this may have been the case with Einstein - for a man to be expert in several fields, even as far apart as physics and politics.
5. The authority in the opinion cited must hold representative views in his field. Where there is controversy, it is not proper to cite one side without acknowledgment of the other.

It is easier to see merits of these criteria of personal reliability and expert qualification than it is to apply them in some practical cases. Just how is the bias of a source to be determined? Just how can it be learned whether an article or a book is representative of settled opinion in a field? - or even is really current? There will be no neat answers to these questions. Yet it often happens that they must be faced. Until there are experts on choosing experts, a man who wants reliable information will have to do the best he can.

Again, even where opinion comes from an impeccable source, human experience suggests care in applying it. Even the greatest expert is human. Revision in science is almost synonymous with progress, and where there is revision, there usually is correction. Life problems of great importance are wisely referred to more than one authority in order to fend against human error. It is good sense to pay for consultation of several surgeons before putting one's life under the knife of any one of them.

Sometimes the surgeons disagree. This is always a perplexity to the layman. Should he accept the opinion of the majority, or of those best qualified as far as he can judge, or of those who are clearest in their explanations? One certain thing emerges from substantial disagreement among authorities, and this is that human knowledge has not reached a satisfactory degree of certainty in dealing with the matter in question. A conflict among experts spotlights the risk of error.

This is a small satisfaction. It is a false generalization, however, to conclude that one man's opinion is always as good as another's. Although it is obvious that, where all knowledge is subject to revision there will always be uncertainty in the world, this does not amount to conceding that an ignorant guess is as good as a responsible opinion. There are whole bodies of problems best submitted to experts - from TV repair to astro-physics. It is perhaps the most difficult question of all to determine, in the practical situation, which problems fall into the group to be sent to the experts, and which do not. No expert can tell a man how to vote or judge for him basic political issues. At the other extreme lies technical information: here the layman is entirely at the mercy of the expert. The problem, as often, is one of the marginal cases.

The value of expertise varies with the state of human knowledge. Where the field is exact, knowledge is the property of the expert. Where the problem is a matter of taste, of moral judgment, of the application of life experience, there may be wisdom, but knowledge in the technical sense is lacking. Knowledge, then, is the field of expertise, and it is for knowledge that the layman appeals to authority.

In summary, an appeal to authority is proper where the problem is technical and the expert cited is qualified and personally reliable. Otherwise, the appeal is suspect: at best the speaker may not realize what is required for a proper appeal to authority; at worst he may be trying to give some opinion of his own a weight it would not have without the aid of great names or unidentified "expert opinion."

EXAMPLE	COMMENT
A senator argues, "George Washington warned against entangling foreign alliances. Invited on all sides to internationalist adventures, we should remember the wisdom of the Father of our Country."	Granted that political scientists consider George Washington to have been astute, the admonitions of his Farewell Address are clearly obsolete. If the first President could be brought back to life today, it would take him years to acquire an understanding of the present world situation. His reputation for being astute might be tarnished if it turned out that he would change none of the many opinions he held in 1798, including, quite possibly, the opinion quoted.
Sign on a billboard, "Thousands of physicians smoke Whank Cigarettes."	The testimonial is a stock in trade of advertising ballyhoo. Thousands of physicians also go without sufficient sleep. This is not even a forthright appeal to authority, since it is not the opinion of the physicians that it cited but their practice. Perhaps we are supposed to get the idea that if the physicians smoke Whanks, we may safely smoke them also, that the practice of smoking Whanks comes from the established opinion that they are not bad for us. There is no evidence offered for such an "opinion."
Peter and Paul are talking about the control of atomic energy. "I am impressed by Oppenheimer's views on this problem," says Paul. "Oh," rejoins Peter, "I don't care what Oppenheimer thinks or says about controlling atomic energy. He's a theoretical physicist."	Peter is right in insisting that any man, even one as outstanding as Oppenheimer, must be qualified in the field in which he expresses an opinion before his view is entitled to any special weight. The remark, "He's a theoretical physicist" seems to indicate that Peter regards high qualification in one field as somehow operating as a disqualification in other fields. This does not follow.
Overheard in a library, "Look! This Webster's Dictionary says that 'primp' means 'dress up' or 'preen.' So that's what the word means and not something else."	The "authority" of a dictionary is a special case. Dictionary definitions have no finality, for the editors of a dictionary do not lay down what words should mean. Rather, they base their definitions upon research into how the words are in fact used by educated speakers of the language. Some words are reported as having a colloquial or slang use. Thus a reputable dictionary is authoritative in the sense that it is a scholarly report of how words are used in practice. Though a dictionary "binds" no one, he who wishes to use a word in an unusual sense will do well to point out the special meaning that he intends or he will run the risk of being misunderstood.

There is a special misuse of authority which is notorious under the name of quoting out of context. This may be done in either of two ways that seem especially attractive to the unscrupulous. The first is for one to make out through a suitable manipulation of the text that an authority is on his side. This is done by omitting distinctions, exceptions or qualifying remarks, or by otherwise distorting the text. The second is to treat the opponent as a sort of authority of his own position and to pounce upon something he has said that can be used against him - if the rest is ignored. A brief example of each of these tricks will suffice.

EXAMPLE	COMMENT
A man tells his wife that they should not eat eggs or other forms of animal fat, because, according to an article in a medical journal, fat causes heart attacks. His wife dutifully eliminates the undesirable foods from the family diet, at great trouble in preparing the menus.	If the husband had quoted the article correctly, he would presumably have mentioned all sorts of qualifications and restrictions on the statistical correlation between excessive accumulation in the body of animal fat and the incidence of heart attacks. He would, moreover, have mentioned to his wife that a certain amount of animal fat is necessary in the diet for health. The layman is particularly liable to quoting scientific authority out of context through innocent oversimplification (see Conclusion).

One of the most flagrant uses of an opponent's own words against him occurred during the campaign of Upton Sinclair for the governorship of California. Billboards made it out that Sinclair was a hater of America, the Flag, God, and Motherhood. The quotations in all cases were out of context.	Sinclair was no politician. As a writer he had frequently used vigorous expression and epigrammatic style. Many politicians do not permit themselves sharply worded statements, for these can look damaging in or out of context.
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16 Appeal to Tradition or Faith: "tried and true"

Some of our traditions, our religious or political tenets, represent policies or basic decisions in the light of which we will wish to examine certain proposed courses of action that involve a group to which we owe allegiance. A nation may be committed to going to war when its allies are attacked, a political party to instituting a particular economic reform, or a church to propagating the gospel according to its interpretation. Where an appeal to these basic policies is relevant for deciding on a course of action, it is always in order. Where the appeal is not relevant, it cannot be proper, as, for instance, where the proposed course of action on its face is no more a consequence of the basic tenets than the alternative courses of action. Where this is the case, the question is what means will best carry out the policy. At other times the basic policy itself is under question; in this case an appeal to it merely states the very issue which is being decided. Such an appeal cannot be in order. Thus, there are two main kinds of improper appeal to tradition or faith.

The first occurs where the discussion concerns ways and means for implementing a group's basic decision. Here an appeal to principle obfuscates the issue by hinting that one party is forsaking or at least conveniently forgetting it. The discussion should properly turn on a consideration of what is called expediency: does the proposed course of action meet the situation? Is it feasible? Let us look at an instance of this first kind of improper appeal to tradition before turning to the second.

EXAMPLE	COMMENT
Peter belongs to the Tin-Workers International Union, Local N, a union, like most unions, committed to the fundamental policy of striving for higher wages for its members. The membership in a certain factory is called upon to decide whether to arbitrate or resort to a strike. Peter addresses the members: "Friends and Brothers, we are pledged to do all in our power to obtain higher wages for our members. It is in our power to strike Therefore, I move that we go on strike."	The manner of Peter's appeal to the policy of his union obscures the issue by suggesting that the alternative proposal is counter to this policy. The question before the members is which course of action will more effectively further the purpose of raising wages. Incidentally, there is also another fallacy in Peter's argument (see #45).

The second kind of improper appeal to the basic decisions of a group occurs when the group is called upon to question the basic decision itself. As circumstances change, groups sometimes find themselves having to re-examine the commitments which originally brought their members together. National examples are the changed attitude toward monopoly since the early days of trust busting, and the diminishing reluctance of some leaders to surrender part of national sovereignty to a world organization. When a proposal to change a policy - to modify a traditional practice or recast a fundamental objective - is under discussion by the membership of a group, it is clearly circular to attack the proposal as undermining the established order. It is irrelevant to argue that the basic decision is fundamental or hallowed by usage and loyal observance - though, of course, these factors will make some proposed changes seem revolutionary and of the gravest concern. Yet whenever the soundness of the established order is being challenged by responsible persons, then the justification for the commitment should be re-examined. The re-examination may result in modifying or renouncing the commitment. It may result in reaffirming it. To reaffirm is also to make a new decision. When reason prevails the group will make such a decision (since it concerns by definition matters of fundamental importance to the group) only after conscientious re-examination. The thing to notice here is that for the very reason that people do not lightly propose the overturning of fundamental commitments, it is all the more disorderly in discussion either to be continually making emotional appeals to them when they are not in question, or to beg the question by mere reiteration of the basic commitment which the group is being asked to re-examine.

EXAMPLE	COMMENT
Paul is reading the Congressional Record for 1919. He discovers the debates concerning the entrance of the United States into the League of Nations and reads the following statement by Senator Peter: "I am an isolationist and intend to remain one. The Wilsonites are subversive of the American tradition, a tradition hallowed by our great founder and by thirteen decades of American history."	The tradition of isolationism amounted to a basic decision of American policy thoroughly entrenched in the structure of our international relations prior to 1919. Those men (the "Wilsonites") who favored joining the League of Nations in 1919 were in effect challenging the soundness of the tradition itself in the light of World War I. Such a challenge is always in a sense subversive: it is a proposal to "subvert" a tradition. To call the followers of Wilson subversive was, thus, merely to state that they were challenging the tradition, a fact obvious to everybody - with an emotional suggestion that it was wicked to do so. Now if Senator Peter had carefully examined the proposal, he earned the right to reaffirm his adherence to the principle of isolationism, supposing his continued acceptance of the tradition to remain unshaken. But he could justify his continued adherence to the tradition only by showing that it was sound, not by an irrelevant reference to its venerated source or long standing establishment.

17 Impressing by Large Numbers: "get on the band wagon"

Mere numbers constitute a sort of pseudo-authority. Sometimes a speaker will bolster his position by pointing out that there are many who hold his belief, buy the brand he is selling, or support the candidate he favors. Though it is pleasant to be in step, to conform, to go along, to ride a band wagon, truth is not always democratic. Even unanimity is not infallible.

The authority of mere numbers commonly amounts to no more than mass suggestion or unquestioning acceptance of tradition. Obviously, what "everybody knows" is not necessarily true, for once "everybody" knew that the earth was flat, that monarchs ruled by divine right, that disease was caused by evil spirits, that slavery was necessary. Informed support of democracy today does not involve the conviction that the majority is always right. Perhaps, while no system as such will guarantee wise government, democracy at least has the advantage of allowing citizens to "kick the rascals out."

Of course, everything else being equal, large numbers do often have a wisdom and authority. We saw that an expert is qualified by being recognized by those familiar with the field, and the more of these the more qualified the expert appears to be. Here it is sensible to be impressed by the numbers of other experts who hold an opinion. Even in matters not commonly thought a field for expertise, people are justified in admitting numbers to help form their opinion wherever those numbers can evaluate the facts and arrive at a reasoned judgment.

EXAMPLE	COMMENT
An editorial presents this argument: "All the world knows that whenever people are free to choose between the life they have experienced under Communist rule and the life offered by free institutions, then great numbers leave Communism, even at high personal cost. Over a million refugees have fled Eastern Germany to become displaced persons in Western Germany, while the movement from Western to Eastern Germany remains negligible. When 75,000 Chinese and North Korean prisoners of war were given the choice of returning to their homes or facing the uncertainties of a life in exile in South Korea or Formosa, 22,000 chose separation from their families and native land. Regardless of whether one looks at Indochina or Hungary or the other Communist satellites, the story remains always the same: streams of exiles and the merest trickle of those seeking repatriation. And let us note that those leaving Communism have lived under it."	Telling argument here. Individuals who have lived under Communism are rather like experts at such a life. Moreover, in matters of experience which intimately concerns them, ordinary people are in a position to judge. Granting this, the numbers are impressive.
Salesman Peter, representing a perfume manufacturer, urges a prospective customer, "Fifty thousand women can't be wrong."	The world presents, unfortunately, a daily spectacle of tens of millions of individuals holding wrong beliefs and consequently following courses disastrous to their social and individual welfare.

<p>A noted philosopher explains in an interview, "Eminent minds have come to the conclusion that in our civilized world the evil in man prevails over the good. As Hobbes put it, 'The life of man is solitary, poor, nasty, brutish, and short.' If I am accused of pessimism, all I can say is that I have lots of company and famous company, too."</p>	<p>That many philosophers have become disillusioned, including eminent men among them, is no guarantee that such an interpretation of life is adequate or even meaningful. Hobbes, incidentally, was talking about the conditions of life in a putative "state of nature" before the benefits of government. Hence the reference to Hobbes involves quoting out of context (see #15).</p>
<p>A housewife to her husband: "Yes, I have heard about the fund raising campaign for the new recreation center. Why, half the social lights of town have endorsed the idea. A look at those endorsements convinced me that we should support it too."</p>	<p>There is both a rational and an irrational possibility in this common situation. The good housewife may be reasoning, "These people would endorse only sound ideas. They endorse this idea. Therefore, this idea is sound." In this case, she is adopting the idea she regards as supported by the favorable judgment of reputable people who, she presumes, have enquired into its merits. On the other hand, she may be swayed by the prestige of prominent names; she may be adopting the idea because it comes from sources that she considers beyond question. If so, she is a casualty of the bandwagon technique.</p>

STIRRING UP PREJUDICE

Prejudice is an opinion held without reasonable grounds: it takes the form of a decided preference for something or aversion to it. One man may favor foreign aid, luxury taxes, or nonrepresentational art; another may firmly oppose the very same things. An appeal to prejudice shrewdly represents a position as coinciding with whichever bias the speaker supposes to prevail in his audience. Such an appeal is evidently different from an examination of the merits of a given proposal - or even of general tendencies and policies relating to the proposal.

It is often presumed that the strongest bias an audience has is toward its own interests, especially its economic and social interests. Correspondingly, whatever threatens the audiences self-interest is a likely area of negative prejudice. Clever speakers take advantage of this - and of their audience - to exploit greed or snobbery or fear. But clever audiences learn to discount ad populum and ad hominem appeals and to pay attention to the arguments ad rem, if any. Ad populum means "to the people," and refers to stirring up group prejudices: ad hominem means "to the man," and refers to appeals to these same prejudices usually by the round-about method of personal attack on the character or motives of an opponent. These Latin terms show how long these fallacies have been recognized; a naive person might be surprised we still have them with us. The remaining expression ad rem means argument "to the issue," and refers to those unadorned arguments that stick to it.

18 Popular Passions: "ad populum appeals"

The appeal ad populum or "to the people" is characteristic of addresses to the uninformed. (Bacon named them "idols of the market-place.") The man who conjures with racial or religious hatred, the agitator who stirs passions by pointing to the evils of colonial government without acknowledging any of its accomplishments, the demagogue who resorts to name calling and in this country brands proposals which he does not like as "communist" or "fascist" or in the USSR similarly applies the word "capitalist" - all these are either relying on popular passion or invoking the self-interest of the crowd. Mark Antony's funeral oration is an often cited instance of this maneuver. The issues that the Roman public was called upon to face were, (1) Had Caesar been guilty of conspiring to overthrow the Republic? and (2) Should any action be taken against the assassins? Mark Antony's speech says nothing of the issues. Instead, he reminds the audience that they once loved Caesar.

*You all did love him once, not without cause.
What cause withholds you then to mourn for him?*

exhibits Caesar's blood-stained mantle,

Through this the well-beloved Brutus stabbed;

implies the conspirator's motives were personal,

What private griefs they have, alas, I know not, that made them do it:

assures the audience he, Antony, is a guileless man,

I am no orator, as Brutus is:

But, as you know me all, a plain blunt man,

and, to cap his case, alleges Caesar's will leaves his property to public uses,

*To every Roman citizen he gives,
To every several man, seventy-five drachmas.*

This persuades the mob; they troop off ready to avenge Caesar, Incidentally, by saying over and over again, "Rut Brutus is an honorable man," Antony raises the issue of the conspirator's honor which, otherwise, would not be in question.

EXAMPLE	COMMENT
Peter is running for city coroner against an opponent who is a recent comer to the town. Peter addresses his audience, "I was born in this town and have lived here all my life. I went to Abraham Lincoln school, and probably some of you still haven't forgotten the time I struck out in the tenth inning of the Medfield game."	Peter appeals ad populum by stirring up the home-folks' prejudice. Long familiarity with a locality is a qualification for some offices, none at all for the duties of a coroner.
A milkman is soliciting orders for a small dairy. "The 'big three' dairies do 80 per cent of the business in this town while the small ones like ours get along on the remaining 20 per cent. I certainly appreciate everyone who helps give the little fellow a chance around here."	This is ad populum to anti-monopoly or pro-little businessman sentiment.
A soap box orator exclaims, "Those high priests of finance, the brokers, bankers and corporate directors of Wall Street, have only one thing in their hearts - the sacred dividend check!"	This appeal to popular passions is of the kind commonly known as "name calling." The device is stock in trade for demagogues. The essence of name calling is relying on prejudicial terminology (see #13) to evoke popular passion - "high priests of finance," "Wall Street," "The sacred dividend check." Inflection of the voice or a context of epithet can make a name like "Wall Street" into a term of abuse.

Appeals to personal self-interest are on the same level as appeals to popular passion. We notice how Mark Antony's funeral oration played on the mob's sense of loyalty, on the feeling that personal motives are out of place in state affairs, on faith in those who lack guile; yet it was holding out seventy-five drachmas "to every several man" which climaxed the scene. Personal self-interest or the appeal ad personam is a simple fallacy, the country cousin of ad populum.

EXAMPLE	COMMENT
Peter is talking to his friend Paul, "I'd advise you not to oppose the new Building Code, not vocally at least. The contractors are behind it, and you've got a lumber yard to keep out of the red. Just a tip to tell you what's good for you."	Peter shows adroitness in getting at Paul's self-interest. Sometimes personal reasons will outweigh a thousand sound arguments.

19 Damning the Origin: "consider the source"

The opposite of regarding argument as established through an appeal to authority (see #15), is the so-called fallacy of origin, that is, rejecting an argument on account of its undesirable source. The force of an argument does not lie in the nature of the source which advances it. Plato makes this point in one of his dialogues, the Phaedrus. Here Plato depicts Socrates as illustrating an argument by inventing a little myth about ancient Egypt, whereupon Phaedrus replies by remarking that Socrates could, of course, invent tales about Egypt or any other place he chose. Socrates then answers the implied criticism by inventing still another myth.

There was a tradition in the temple of Dodona that oaks first gave prophetic utterances. The men of old, unlike in their simplicity to young philosophy, deemed that if they heard the truth even from 'oak or rock' it was enough for them; whereas you seem to consider not whether a thing is or is not true, but who the speaker is and from what country the tale comes.

—Plato, *The Phaedrus*

Socrates' rebuke is justified. It is true that we want to take into account the reliability of a man before adopting some view of his or before believing without other warrant something he tells us. But even a notorious liar or a man strongly motivated by self-interest can on occasion tell the truth. Of the millions of sentences uttered by Hitler, it would be remarkable if all were false - great numbers of the sentences in Mein Kampf, for instance, are true. Our disgust with Hitler does not relieve us from considering any true statements that he made or any sound argument that he advanced. Socrates is reminding us that what

we should want to know about a statement is whether or not it is true, and that it is irrelevant where the statement originates, whether in a tree or a rock - or a myth for that matter.

EXAMPLE	COMMENT
A registered lobbyist for a group of lumber interests in the Northwest urges passage of a bill which would open a portion of Olympic National Park for logging by private companies. The following comment appears in the letter column of a local paper, "This town should resist the assault on the National Park system which lobbyists for the lumber interests are trying to put across to their own economic advantage."	It may be in the national interest to reduce, maintain, or extend the limits of Olympic National Park. The fact that the plan is backed by a source whose strong economic interest provides an obvious reason for anticipating bias does not justify dismissing the proposal without enquiry into its merits.
Paul declares, "Though I agree with the opinion that Prohibition didn't work well when it was tried, it does seem to me that our present system of liquor control is inadequate. I favor outlawing hard liquor entirely, while permitting the sale and consumption of beer and wine." To this Peter rejoins, "This is a strange thing for you to be saying over a whiskey sour, Paul. Perhaps you don't realize that the quip, 'Do as I say, not as I do' gets its point because of feeble arguments like yours."	This example is a special sort of attack on origin (it has the classical name <i>tu quoque</i>). Instead of saying in such cases, "consider the source," the speaker says, in effect, "You believe that?" as if the position involved an inconsistency. Yet it is not necessarily inconsistent for a Republican to advocate public ownership, a Southerner integration, a doctor socialized medicine, a married clergyman celibacy. If an opponent upholds the expected position, you discredit him for special pleading (see #26); if the unexpected position, you laugh at him for inconsistency. You are in the comfortable position of saying "Damned if you do, and damned if you don't."
An address at a town meeting, "I believe in looking a gift horse in the mouth. Here we have the largest landowner in town offering to donate a site for the new high school. Let's choose our own site and pay a fair price for it."	The speaker refuses to look his gift horse in the mouth. He condemns the horse before he discovers anything wrong with it.
Overheard after a lecture: "I listened with interest to what Mr. Thomas has to say about the social policy for integration in the school system. But, I ask, has Mr. Thomas ever lived in Georgia? No, not in Georgia nor for that matter anywhere else in the South."	This line of argument suggests that lacking a particular experience somehow disqualifies any opinions advanced by the source. It is certainly no fallacy to bring out the qualifications or extent of experience possessed by one who advances opinions, for these bear on the source's standing as an authority (see #15). But to allege lack of qualifications with the innuendo that this disposes of the testimony is to commit the fallacy of origin.

20 Personal Attacks: "ad hominem"

Damning an opponent is a common and odious method of damning the source (see #19). Personal attacks are effective because it is difficult to credit a man who has been tarred and feathered with obloquy. There is no argument easier to construct or harder to combat than character assassination, and this may be the reason personal attacks are so commonly on the lips of ignorance and demagoguery. The armory of personal abuse is inexhaustible: nobody finds it easy to forget the doubts engendered when a man is represented as being dishonest, cowardly, crafty, greedy, perverted, conceited, incompetent, arrogant.

How, then, can one take account of the character and motives of parties to an argument without falling into fallacy? Personal considerations are certainly relevant for judging the reliability of a man, his willingness to tell the truth. If judgment of a man holds him unreliable, then his statements are rightly suspect. But there is a difference between "suspect" and "false." And there is a difference between taking into account the reliability of a witness and blindly assuming that personalities dispose of issues.

EXAMPLE	COMMENT
An alderman is indicted for payroll padding. Interviewed by a newspaper, he declares, "Everybody knows that Jones dug up this charge and that he has been out to get me for a long time. But I'm not worried. The people won't forget that I've been plugging for better schools and parks, while Jones's great public service to date was in getting mixed up in that Sunnyside real estate scandal."	The alderman is resorting to personalities to becloud the issue. He does this positively by reminding us of his own alleged public service and negatively by discrediting Jones with allegations of bad motives and of involvement in a scandal. Whether true or false, none of these answer the charge.
Witness Paul: "My objection to the proposed legislation is that it sanctions depriving a person of his job without informing the person concerned of the nature or source of the evidence against him. Under these conditions there is no proper chance to answer the charges." Senator Peter: "You are a member of the American Civil Liberties Union, which defends Communists?" Witness Paul: "I do belong to that organization." Senator Peter: "And you expect this committee to give weight to your testimony?"	There is no reason to suppose membership in the American Civil Liberties Union has any bearing on the individual's willingness or capacity to tell the truth. Clearly, Senator Peter's technique is to tar both Witness Paul and the American Civil Liberties Union with the brush "defends Communists" - an action expected to evoke general disapproval. The example, incidentally, also illustrates the trick of the half-truth. The statement "The American Civil Liberties Union defends Communists" is true - so far as it goes. But the Civil Liberties Union does not defend Communists as Communists, and it also defends on principle Republicans, Democrats, persons seeking to become naturalized citizens, or anyone else whose case presents an important civil liberties issue under our Constitution. Senator Peter has dropped consideration of the issue to indulge in the type of attack which newspapers characterize as the "smear" technique.
A foreman is fired by the XYZ Canning Co. He gives a newspaper interview charging unfair labor practices in the cannery. A cannery official declares, "The foreman is sore about being fired. He is a troublemaker and was once convicted of embezzlement."	The reference to the foreman as a "troublemaker" can be dismissed as a vague personal charge designed to create prejudice. His alleged spite and previous dishonesty bear on his reliability in telling the truth. This should be considered as character evidence; such evidence can justify not accepting his story without further confirmation. Notice that the idea of "not accepting" is not equivalent to "rejecting." After all, the foreman may be telling the truth even if he is a vindictive rogue. The problem is, then, to find out whether the unreliable foreman was telling the truth on this occasion. This can only be done by seeking more evidence about the facts. Those who adopt the simple solution of reasoning to themselves, "The foreman is a rascal, so we will disregard everything he says," are the victims of prejudice.

It might be remarked that lawyers call this the "bad man" argument. Juries seem inclined to believe that if a defendant has a previous criminal record he must be guilty of the present charge. The fact of previous conviction can be brought out legally only if the defendant testifies in his own behalf, when it becomes admissible as "character evidence." Because of the *bad man* possibilities, counsel sometimes decide not to allow a defendant of unsavory record to take the stand in his own defense.

21 Forestalling Disagreement

The fallacy here lies in the attempt to make an opponent or an audience unwilling to meet the argument. Adults usually have learned to avoid needless quarrels and to steer clear of embarrassment. So they develop skill in phrasing their ideas in ways that will forestall disagreement, and in turn are silenced by the implied threat contained in assertions that are phrased to make disagreement embarrassing. Many expressions such as "it is obvious," "everybody knows," "clearly," "of course," "as any one can see," serve the double purpose of assuring the audience that it is not necessary to think about the problem and cowering those with the temerity not to go along. One who protests, "It isn't obvious to me!" runs the danger of appearing ignorant or boorish. Other means for forestalling disagreement are flattery of the audience ("I don't need to tell an intelligent group like this..."), appeals to the desire to be agreeable ("I believe everyone will agree that..."), appeals to the desire to be respectable ("Every decent American wants..."), and so on. Forestalling disagreement ranges from mild devices calculated to make agreement easy ("Of course we all believe...") to highly prejudicial assertions to intimidate opposition ("Only a muddled headed person would suggest..."). They are characteristically question begging (see #49),

EXAMPLE	COMMENT
"It is obvious," argues Peter, "that unless scientific research is subsidized, the whole country will suffer."	Whether or not "the whole country will suffer" is what Peter should be busy trying to prove. "It is obvious" is a mild attempt to forestall disagreement.
A teacher observes to his class, "Even a freshman realizes that great artists are not necessarily good draftsmen."	Further discussion is all but precluded here.
The Governor addresses the state legislature: "The state budget this year is the largest ever submitted to the legislature of this state. There are, as always, items and details in it of which I do not approve. No doubt some of you will find other items and other details of which you disapprove. Yet the keen sense of responsibility which has been so evident in this legislature is a guarantee to the people of this state that the needs provided for by this budget will be met."	Flattery seems to be the chief ingredient of the Governor's approach. The suggestion that the legislature's "sense of responsibility" assures passage of the budget is an attempt to forestall opposition to its provisions. Even this flattery seems designed to intimidate.

22 Creating Misgivings: "where there's smoke there's fire"

The lingering suspicion which follows on unfounded charges of immorality, corruption, or disloyalty is notoriously hard to clear away. Character assassination is probably the most powerful use made of this fallacy. Those close to a man who has lived down such a charge may be able, through their knowledge of the facts, to hold that man in undiminished regard. Others, long after they have forgotten the nature of the charge, to say nothing of whether or not it was substantiated, tend to retain lingering suspicions. Maybe they had better not rely on Paul because of that funny business back in - was it the election year? Yet what they ought to be remembering is the fellow Peter, who made the damaging allegations against Paul without impressive proof.

It is a paradoxical thing that the more wild and damaging the charges, the more likely they are to be believed. People seem to reason that nobody would say such a terrible thing unless it were true, partially at least. Hitler made a famous analysis of this phenomenon when he wrote:

... in the size of the lie there is a certain factor of credibility, since the broad mass of the people will be more easily corrupted in the depths of their hearts than they will be consciously and intentionally evil. Consequently, with the primitive simplicity of their feeling they fall victim more easily to a big lie than to a small one, since they themselves occasionally lie in small matters but they would be ashamed to tell great lies. Such a falsehood will not enter their minds, and they will also not be able to imagine others asserting the great boldness of the most infamous misrepresentation. And even with the explanation of the matter, they long hesitate and vacillate and accept at least some ground as true; consequently, from the most bold lie something will remain....

—Hitler, *Mein Kampf*

Hitler's "big lie" technique finds illustrations in the history of every nation. Instances from our own history are the fabrications, for example, by Allied propagandists, about Germans cutting off the hands of Belgian babies during World War I, by the Communists in making the "germ warfare" charges during the Korean War, and by those who labeled the Democratic Party as the "Party of Treason" during the heyday of McCarthyism. One extremely significant instance of the "big lie" in German history was the creation of the "stab in the back" myth to explain Germany's defeat in World War I. Actually, before the German home front crumbled the German army had failed in its last great offensive and there was no longer hope for military victory over the rapidly increasing Allied power. Yet misrepresentation of the facts, constantly reiterated, persuaded many Germans that their army had been undefeated. The creation of this historical myth during the post-war period was designed to restore the prestige of German military might and to provide a popular scapegoat by attributing defeat to demon groups - radicals, pacifists, defeatists.

The ultimate effect of lying makes interesting speculation. Hitler may well be right in arguing that the very boldness of the "big lie" gives it credibility, initially at least. But perhaps his own career fairly illustrates the shortsightedness of this sort of Machiavellianism. At least his repeatedly making promises which turned out to be "big lies" (For example, the Munich Pact and Hitler's assurance, "This is my last territorial demand in Europe.") finally convinced millions of people - statesmen and householders alike - that it was pointless to make agreements with Hitler. In other words, confidence in communication broke down, and the conviction grew that further appeasement would lead only to further aggressions. It was this conviction that turned Hitler's demand for Danzig into a world war instead of another diplomatic concession. The crude unscrupulousness of the "big lie" is apt to operate like a boomerang. Talleyrand might have dismissed the device with his dictum, "It is worse than a crime, it is a mistake!"

EXAMPLE	COMMENT
A pastor is named in a paternity suit claiming support for an illegitimate child. Evidence shows that the woman and the pastor both were guests at three social gatherings. Tests, however, establish that the accuser was blood type "O," the pastor has type "A" and the child has type "B." Suit is dismissed after uncontradicted testimony by an authority on eugenics that a child of blood type "B" cannot be the offspring of parents with types "O" and "A." In spite of being cleared of the paternity charge, the pastor decides to seek a new congregation. He finds one only after great difficulty.	The evidence clearing the pastor is as certain as any that human beings can obtain. His accuser has patently indulged in promiscuity and has wrongly - probably with intentional falsehood - ascribed the paternity of her child. Yet a moral suspicion still lingers even, perhaps, in the minds of those who know all details of the case, We have indicated this by italicizing "probably" above. What were the relations between the pastor and the woman? Of course, he didn't happen to be the father, but....
"They are saying around the City Hall that Mayor Paul's cronies bought up a lot of land over there when they got the tip that the freeway was going through." So confides gossip Peter to his neighbor.	If Peter's neighbor repeats this unsubstantiated charge, he will be as guilty as Peter of rumor-mongering.

RATIONALIZATIONS AND LIP SERVICE

A wrestler does not rely wholly upon his own strength; he seeks to take unexpected advantage of the movements of his opponent so that the opponent's muscles contribute to his own downfall. A sudden tug on the arm provokes resistance, and the wrestler then throws his weight in the same direction. An argument is sometimes like this; one party to it may pull one way when his intent is to go somewhere else. We have chosen the heading "Rationalizations and Lip Service" to describe some of these feints. They are proposals which utilize the strength of others to throw them off balance. But, unlike the wrestler who is conscious of what he is doing, sometimes the speaker falls for his own deceptions.

Rationalization is the common human failing of offering to oneself or others some "good" reason in support of what one actually chooses to do or believe for another and perhaps discreditable reason. Nothing is more natural in taking one side of a case than to make the case one-sided. Though people are sometimes aware of their own rationalizations, more often they are not.

Lip service, the last fallacy under this particular division, is the fault of paying verbal homage to one thing while actually doing or advocating something quite different. The verbal acknowledgment smooths the way while the speaker heads for a different goal. Let us now take a closer look at some of the common rationalizations.

23 Self-righteousness

Everyone in degree believes in the worth and justice of his own motives and interests. No one can view his own interests with perfect fairness; no one can even be certain of his own deepest motives. Yet a thoughtful man can be aware that his thinking may be beset with "secret faults." Hard as it is to avoid such faults, one can at least realize that righteous intentions do not attest to truth, and that neither interest nor motives have any necessary relation to the justice of a case. One may be right in a contention which accords perfectly with his desires and interests - or he may be wrong. And one can do the right thing for the wrong reasons: one can be selfish or bigoted and yet, at the same time, act correctly. We have already pointed out the fallacy of disposing of a proposition on the ground that its proponents are unreliable or actuated by bad motives (see #19). Here we deal with the error of confusing self-interest or good intentions with justice and truth.

EXAMPLE	COMMENT
A dictator addresses a vast audience: "We have done all that we can to keep the peace despite perfidy and insolent provocation. This morning I ordered our army to march on foreign soil, and, God willing, we will right the wrongs which we have too long endured. Our hands are clean. Our aim is justice."	The dictator appeals to the audience's willingness to believe in the justice and nobility of their own cause. Practically every modern war exhibits millions of people convinced of the Tightness of the cause which coincides with their self-interest or what they are persuaded to believe is their self-interest. The spectacle is a tribute to cultural conditioning, the efficiency of distorting the news, and the human weakness for assuming that one's own motives and interests must be noble and just.

24 Finding the "Good" Reason

Consider the commonplace excuse, "Sorry to be late. The five o'clock rush held me up." Here the speaker is offering a respectable minor premise from which it is possible to infer a syllogism (see #40) which will excuse the tardiness. The argument runs:

If a person is delayed, he will be excusably late. I was delayed in the five o'clock rush. Therefore, I am excusably late.

Suggesting a fact which implies the conclusions desired is a face-saving way to make an excuse. If you are not minded to accept the excuse, you may think up a different set of premises. For instance:

A person taking care to be on time will anticipate foreseeable delays.

The five o'clock rush is a foreseeable delay. Therefore, this person did not take care to be on time.

"Finding the 'good' reason" is the process of selecting a fact which is creditable or, at least, not discreditable, and proposing it as the explanation for one's actions.

EXAMPLE	COMMENT
A student explains his failure in chemistry. "If you are a good parrot you can crack that course for an 'A.' I can't stand sheer memory courses."	There are lots of possible explanations for the student's failure. Maybe he does not study, maybe the course is too advanced for his background, perhaps the instruction is obscure, perhaps the student is dull; it is quite possible that he is uninterested in the subject so that his mind does not focus on it when he is "studying." Very likely the explanation of his failure involves several of these factors. For the purposes of rationalization, the student wants a reason which will be respectable. Thus, he presents this argument: Chemistry is a sheer memory course. I "can't stand" (i.e., do not learn the material in) a sheer memory course. Therefore, I do not learn chemistry. We are, of course, free to disagree with either or both of these premises.

25 Wishful Thinking

Self-interest often leads us to refuse to look for evidence that we don't want to face. Ostrich-like, we ignore the facts. On wishful thinking we build false expectations. When these are disappointed, we may have a rude awakening.

EXAMPLE	COMMENT
On a balmy spring day Salesman Peter wearies of soliciting prospects. "There are lots of good contacts to make at the golf links, and besides I need a rest," reflects Peter. He takes the afternoon off.	Let Peter not wonder if his sales drop.
Caesar relates in his Commentaries how a Gallic tribe accepted a wild rumor to the effect that the Roman army had been destroyed and how they poured down pell mell on the Roman camp. "People believe what they want to believe," noted Caesar.	Rationalizing isn't new. It was the Gauls who met destruction.

26 Special Pleading: "having it both ways"

When scientists of the American Cancer Society presented evidence strongly linking cigarette smoking with lung cancer, many smokers became uneasy. Then other research organizations argued that the conclusions were not proved, and smokers were supposed to be reassured. But some noticed that the reassurance came from laboratories supported by the tobacco interests. Now it certainly does not follow that arguments favoring the use of cigarettes are automatically wrong because those making them stand to gain by the sale of tobacco. To suppose so is to fall into the fallacy of origin (# 19). Yet such arguments become suspect. They seem likely cases of one-sided pleading.

One-sided pleading becomes special pleading when you "have it both ways." You find the reasons where your advantage lies, but refuse to apply the same principle to yourself that you apply to others. Salesmen, lawyers, debaters are not the only people ever guilty of rationalizing in this way. Scientists, educators, statesmen - in fact anybody who has something to gain_or who has merely warmed to his argument - can be found on occasion ignoring or twisting the facts to his own advantage.

EXAMPLE	COMMENT
A realtor shows a friend a large parking lot which he has recently acquired to accommodate the cars of his salesmen. "It is a good investment," he declares. "Nothing I could have done would have saved more time and annoyance for my employees." Shortly thereafter the City purchases land for a parking lot to accommodate municipal employees. The land values are comparable and the parking facilities equally congested in the two areas. "Another instance of extravagance in the City Hall," protests the realtor.	Unless the realtor can point out significant differences between the two situations, what is a "good investment" for one employer will hardly be "extravagant" for another.
Geopolitician Pietro writes: "Though Nice was lost to France in 1860, the historic claim of Italy to this city remains bright in the hearts of Italians. No true Italian can forget Garibaldi's protest against this annexation: 'You have made me a stranger in the land of my birth!'" Later, Pietro is discussing Italy's possession of the South Tyrol, a German-speaking area annexed by Italy after World War I. "Only in the crucible of war did our country earn her natural frontier on the Brenner Pass. Geography must forever ratify Italy's claim to this land."	Pietro's claims manifest the desire to have it both ways, a desire characteristic enough of those advancing historic, ethnic or geographical claims to suit the convenience of their own nations. Pietro's shift of grounds from a historical to a geographical basis reveals the special pleading of his contentions.

27 Lip Service

All of us are more or less restrained by the taboos current in our particular society, in our culture. Perhaps this is fortunate since it promotes the stability of social institutions and makes for cultural unity. At any rate, the pressure which society exerts to make individuals conform to its beliefs and ideals is generally sufficient to prevent all but occasional individuals from openly repudiating the prevailing notions. Examples may be found in any culture. The principles of orthodox Marxism have been so enshrined in the Soviet Union that Lenin and his successors have constantly made obeisance to Marx even though departing widely from his notions. In America, almost every group renders homage to the ideals of the U. S. Constitution, although it is quite clear that neither the communist, neo-fascist nor superpatriotic elements actually uphold the civil liberties essential to the plan of government which the Constitution provides. In American culture it takes a hardy individualist to express dissent from the principles of Christian ethics or to idealize war. One may, without evoking any intolerable hostility, advocate or do all sorts of things inconsistent with Christian ethics or continued peace; only open acknowledgment of the consequences of one's acts is apt to bring immediate public repudiation. Consequently, individuals who find themselves opposed to some cultural norm often see the wisdom of giving lip service to it. In fact, a person may render lip service to an accepted ideal of his group without even realizing that he is constrained in his belief. For instance, an individual may support an ideal such as racial equality without ever questioning the depth of his belief until one day he is called upon to put it into public practice. Sometimes lip service is a smoke screen consciously created, as with the person who proclaims his support of sexual taboos which he clandestinely violates. Such a person has made the passage from cowardly lip service to flagrant hypocrisy. It is not a difficult passage.

As is the case with much faulty reasoning, lip service often goes unnoticed because it is so hidden in verbiage that the announced ideal and the inconsistent behavior are not exposed to sharp contrast. Or time may obscure the fact that an individual's deeds do not match his words. At any rate, the majority of mankind on occasion, intentionally or otherwise, say one thing and do another.

The extent to which even very good people fall short of their professed standards of behavior is brought out forcibly in a well known passage from T- S. Mill's *On Liberty*:

All Christians believe that the blessed are the poor and humble, and those who are ill-used by the world; that it is easier for a camel to pass through the eye of a needle than for a rich man to enter the kingdom of heaven; that they should judge not, lest they be judged; that they should swear not at all; that they should love their neighbor as themselves; that if one take their cloak, they should give him their coat also; that they should take no thought for the morrow; that if they would be perfect they should sell all that they have and give it to the poor. They are not insincere when they say that they believe these things. They do believe them, as people believe what they have always heard lauded and never discussed. But in the sense of that living belief which regulates conduct, they believe these doctrines just up to the point to which it is usual to act upon them.

EXAMPLE	COMMENT
Peter is giving a speech to the Independent Farmer's Association. "Our country has grown great under the system of free private enterprise. We are proud of the industry and initiative of the millions of individuals who have worked out their own destinies under our flag. Free enterprise has built up our nation and will continue to build it up." After this introduction, Peter devotes the main part of his speech to advocating government subsidies for wheat based on a system of price and acreage controls.	Peter draws attention to his belief in free private enterprise. Then, cuckoo like, he lays a plan which hatches into a very different kind of bird. Subsidies and government controls, whatever their form or merit, are not applications of free private enterprise.
Address to a Veterans' Organization: "Democracy must be alert against government by special interest and pressure groups. The legislator should listen to the farmer, the businessman, the veteran - but he must decide for the good of all." The speaker goes on to explain how he is supporting a bill that greatly extends benefits for veterans. "Your Congressman won't be against this bill if he gets a lot of letters from you!"	Though it is fashionable to deprecate "special interests and pressure groups," few speakers can resist the temptation to appeal to such groups whenever opportunity offers and the question concerns their own interests.

BIASED MISCONSTRUCTIONS

The previous section dealt with fallacies that are primarily self-deceptions, and this section will add another group of the same sort. If a man rationalizes to his own advantage, he may incidentally beguile others into seeing things his way, but the principle operating to produce errors in his arguments is that he has already deceived himself. In the present group also there is a psychological precondition or bias on the part of the speaker, by which he genuinely deceives himself. If he deceives others, he does so incidentally.

The man who refuses to examine evidence against his friend because he "knows" his friend is honest, who praises the "industry" of the ants, who complains at the absence of ambition amongst a tribe of Indians, who gambles foolishly on mistaken notions of odds - this is the man who forgets that circumstances alter cases. He gets hold of some quite intelligible concept and brashly misapplies it to situations it was never designed to cover. These misconstructions are interesting chiefly as illustrations of the protean ways bias can disguise itself.

28 *Apriorism*: "invincible ignorance"

Closing one's eyes to evidence alleged against something one believes in, such as the honesty of a friend, is frequently described as an attempt to deduce facts from principles, instead of inducing principles from facts. Reasoning a priori, "in advance" of the facts, is regarded as a fallacy. When Galileo invited learned men of his time to view the moons of Jupiter through his telescope, some refused on the grounds that, if they saw anything, it would be an illusion, no doubt diabolical, since the number of the heavenly bodies had already been fixed with finality by astronomy. This is the notorious text-book Let us first consider a rather ordinary case, also related to science.

My friend is ill. Urged to see a doctor, he waves aside the suggestion declaring, "Medicine is an art, not a science. It's a hodgepodge of theory and specific remedies." Now it is true that medicine as a whole is not a science in the sense in which physics as a whole is a science. Yet many medical facts are scientifically established with a reliability approaching that of physics. Diagnosis is frequently very confident and treatment successful. My friend seems to be deducing a distrust of medicine from a definition of "science." The definition of a term cannot affect the nature of the facts; all that one can deduce from a definition of "science" that excludes medicine is that medicine is not a "science" as defined. This has nothing obvious to do with whether or not one should see the doctor.

Yet isn't it likely that what my friend is doing is merely rationalizing a disinclination to seek medical advice? This disinclination may arise from entirely other grounds. But even supposing that he is standing vigorously on principle, what is so wrong with standing on principle? If I refuse to spend an evening watching TV on the principle that TV is a waste of time, I might on a given occasion miss out on a first-class program. Does not that lay me open to a charge of deducing facts from cast-iron principles? Yet a man must be allowed to act on some simplifying principles in his life. My friend avoids medicine as long as he can. I turn my back on TV. My wife refuses to study logic on the principle that it is dull. Her brother refuses to travel on the principle that tourists always get overcharged.

At the worst, some of these principles seem to be merely rather broad and illiberal. As such, arguments based on them can be dismissed as faulty generalizations, rationalizations, or irrelevancies.

The case of the learned men who refused to look at the moons of Jupiter seems more important. What is the nature of their difficulty? The science of astronomy, at that time Ptolemaic and Aristotelian, allowed no provision for the discovery of new planets, and moons of planets. Should the astronomers have overthrown their science at the behest of a crank with a gadget? The telescope had just been invented, and optics was not at all well understood. Nobody in Galileo's day could

have provided a very clear explanation of how a telescope works. Cautious men were in effect being asked to invest enormous intellectual capital in what might very well seem a mere conjurer's apparatus. It is rather as if someone were to ask me to invest \$1000 in a perpetual motion machine; I do not understand the novel theory of the device, and I don't propose to take the time to learn about it. The analogy is not accurate, for the situation with Galileo is even worse, but it will do. Can I be accused of aphorism when I "deduce" from the laws of classical physics that the machine cannot work? Why not? After all, I am being asked to question these very principles, and I refuse "in advance" to examine the facts.

Whenever in science or ordinary life people predict from principles that something will or will not occur, they are in a sense "deducing" facts in advance. It is hard to see where a line can be drawn between what is called apriorism and ordinary prediction.

There does remain, nonetheless, a cast of mind which seems peculiarly closed to evidence. When confronted with such a mind, one feels helpless, for no amount of evidence seems to be clinching. Frequently the facts are simply ignored or brushed aside as somehow deceptive, and the principles are reaffirmed in unshakable conviction. One seems confronted with what has been called "invincible ignorance." It is this approach to evidence that offends persons with a more empirical cast of mind. Empiricists are characteristically ready to throw out principles that don't fit neatly with the evidence. They regard principles as a posteriori expedients (derived "from after" the facts) rather than absolute charters of truth. Nevertheless, philosophers have spun out many different worlds from such absolute principles. These worlds are often beautiful and compelling, but as they differ among themselves, they cannot all be true, and few have the remotest similarity to the cosmology of modern science.

Our examples are intended to illustrate the cast of mind that clings with blind certainty to principles, even in the teeth of the facts. We do not suppose that there is a use of principle that is apriorist in itself.

EXAMPLE	COMMENT
Mrs. Peter is told that a ten-year program of introducing fluoridation into the water supply demonstrates that decay in the teeth of grammar school children fell off 60%, as compared to the school group immediately prior to the introduction of the fluoride. "Well," rejoins Mrs. Peter, "I'm still against the program because I am opposed to experimentation with human beings, children especially."	If ever it was sound to generalize that innovations in public health were as apt to be injurious as beneficial to health, this generalization itself would be subject to continual reassessment as man's endeavors to control environment become guided by improved techniques and increased knowledge. Mrs. Peter evidently chooses to reject out of hand such innovations as "experiments." Perhaps her mother objected to vaccination.
"Government regulation is a noose around the neck of initiative, and I'm against having any more of it than we have to. So when the state sets out to prescribe uniform accounting methods for business, I am not even interested in hearing the reasons."	The "noose" is the gathering together of a wide range of instances, branding them indiscriminately "GI" for "government interference," and threatening to shoot as a rustler anybody daring to attempt rescuing one calf or another from the corral. "I am not even interested in hearing the reasons." Here speaks the apriorist mind.
A union member addresses a meeting of his local. "Friends and brothers, the object of the company is to make money, and the way to make the most money is to pay low wages. The only way we are going to get any concessions is by fighting for them. The idea of negotiating on a new contract for three weeks more is just so much time wasted. Thank you."	Past experience in dealing with the company in question might give more or less support to the speaker's view. But no such evidence is cited; rather the opinion of the company seems to be derived from a general principle concerning employers, that their object is to make money and, hence, to depress wages. Such a speaker is almost impossible to reason with. Down comes the principle, and that settles it. The union member has managed to cast his thought into an unfortunate mold: the cast-iron mold of apriorist principle.

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"Government regulation is a noose around the neck of initiative, and I'm against having any more of it than we have to. So when the state sets out to prescribe uniform accounting methods for business, I am not even interested in hearing the reasons."	The "noose" is the gathering together of a wide range of instances, branding them indiscriminately "GI" for "government interference," and threatening to shoot as a rustler anybody daring to attempt rescuing one calf or another from the corral. "I am not even interested in hearing the reasons." Here speaks the apriorist mind.
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30 Cultural Bias

It is hard to avoid judging others by ourselves. It is especially hard to be tolerant of the customs or beliefs of other groups, classes, cultures, when they run counter to our own. All of us are molded by our social life until we become its creatures; we mistakenly take custom for human nature. "Cultural fallacy" is the name anthropologists give to the misapplying of the values of one culture to another. Ruth Benedict showed in her *Patterns of Culture* that so fundamental to western culture is a sort of social ambition or aggressiveness that it is hard even to find means of explaining these traits to the Pueblo Indians, whose culture discourages such motivation. Cultural bias is allied to many sorts of social prejudice, and its name can conveniently cover them all.

Personification is taking man as the measure of all things. The cultural fallacy is taking one's group as the measure of all men. Both involve a pouring of new wine into old measures. The measure is often a moral or aesthetic judgment. In the case of the cultural fallacy, sometimes people find the foreign to be "alien" in the pejorative sense; that is, they regard it as bad or ugly or both. At other times, they more charitably find it "exotic" or "quaint," that is, novel and interesting in its appearance but not fundamentally different: "We do it this way. They do it that way. That's all." Both reactions reflect a particular "pattern of culture." Both judge. The one frankly accuses. Though the other attempts to excuse, it excuses on the ground that what is different is only superficially so: one's own pattern is somehow still basic.

Now some cultural patterns may indeed be basic, as where two differing rituals serve the identical cultural function. Whether a swain courts his choice with a box of chocolates or with a handful of raw fish is probably an economic accident. Moreover, some cultural traits to be found in the world, indeed, in our own culture, are bad or ugly. When Bertrand Russell remarks that we cannot know it is bad to enjoy the infliction of cruelty, since science cannot prove it bad, he seems to lean over into cultural relativism - the opposite of the cultural fallacy. If science can show that the enjoyment of cruelty is psychotic in an individual or a culture, then that would seem reason enough to call it bad wherever it occurs. Psychosis is self-defeating and cannot consistently be encouraged or permitted, if survival is a goal.

There is no occasion to despair of a knowledge of morality, or to relegate morality to an area of mere feeling, in order to account for the fact that cultural patterns exhibit differing moral codes as well as mere differences in custom or etiquette. It is, in fact, a truly scientific knowledge of morality that teaches us that what might be good in relation to our culture may be good or bad or indifferent relative to other cultures. Yet some things, indeed, must earn the same moral judgment wherever they occur, though these are apt to be fewer than most people think. It will require a profound study to understand this complex planet - well beyond the capacity of any one man. Yet it is not beyond the power of every responsible person to refrain from judging the practices of other ethnic, religious, occupational, or class groups, by the principles of one's own little place in the world. The chances are that, far from being the basic principles of human conduct, these reflect only the most parochial or transitory prejudices.

EXAMPLE	COMMENT
An American soldier, returning from Korea, praised the endurance and courage of the Koreans. Then he complained that the whole country "stank" from the "incredible" methods of fertilizing the rice fields, and he added, "Even the food of these gooks stinks."	Courage and endurance are praiseworthy traits in most cultures, perhaps in all, and the soldier's praise of the Koreans, who prize them highly, is deserved. When the soldier speaks of the use of human excrement as an "incredible" method of fertilizing, he shows only his ignorance, since vast areas of the world employ this method. It is true that Kimch'i "stinks." So do many western herbs and cheeses - consider limberger. The word "gook" has become a name of contempt; it is an offense, not only to the Korean people, but to all men of decent feeling. Incidentally, the name arose innocently enough, for it is close to the way the Korean people refer to themselves: their word for "person," occurring in many names, is "Kuk."

Frenchman Pierre returns to Paris. "L'Amerique! Une telle experience! Why, they boo the umpire at their games and have a 'drum majorette' parade the stage when they are nominating the President! I'd rather lose half our empire than have people chew gum in my face."	When the cultural bias impedes understanding between cultures so closely related as those of contemporary France and the United States, no wonder that some practices in distant or primitive cultures seem, not merely strange, but contrary to good morals or even to human nature.
Hero Peter returns to New York. "Yes, I got the Croix de Guerre complete with a manly kiss. You bet I blushed!"	
Northern travelers often return from the South complaining of the indolence, ignorance, racial attitudes, and general backwardness of certain areas. Typical comments include "They're still trying to live in the antebellum days." "Even their language reflects their backwardness; they drawl their words and drag their feet." "Jim Crow is simply insufferable."	These remarks are as intolerant as Jim Crow. Some of the areas of the South are, indeed, economically backward - through little fault of their own, as people don't willingly choose pellagra and substandard housing. Jim Crow is indeed intolerable, but the Supreme Court itself has recognized that the process of non-segregation involves vast complexities and difficulties and requires only that it be achieved in a reasonable time. As to the way of speaking, it reflects ordinary dialectical or regional differences. These same travelers, if they go to England, probably come home imitating the oh-so-funny "veddy, veddy" British pronunciations.

31 *The Gamblers Mistake*

"If the chances of a coin coming tails are exactly one in two, and we have just had a run of nine straight heads, what are the chances of heads coming up the next throw?" "Let me have a pencil." "You don't need to calculate. The chances are one in two." "You mean that it is one in two to have ten straight heads?" "No, the chances of that are less than one in a thousand,"

There is no contradiction here. The gambler who bets his fortune that the next throw will be tails has an even chance of losing it. The series of heads has no effect at all on the next throw. If in advance he had bet against ten consecutive throws, he probably would have collected his bet; it would be a sound investment to give odds of several hundred to one. This fallacy has been discussed ever since the invention of roulette and the consequent discovery of probability theory by Pascal. But perhaps the little dialogue above brings out all that is important to remark here.

There is a variation of the gambler's fallacy consisting of the failure to realize that a slight possibility is, nevertheless, still a possibility. This is a sort of failure of imagination. Of course, a man directs his main efforts to meeting those conditions which seem most probable, but, in important matters, he should not dismiss the improbable. The unlikely may be what actually happens.

EXAMPLE	COMMENT
When the presence of unidentified aircraft in the vicinity of the Hawaiian Islands was indicated by radar on the morning of December 7, 1941, the officer in charge disregarded the evidence on the grounds that hostile planes could not be anywhere near.	Great generals have won battles by outwitting less imaginative opponents whose preparations were limited to taking care of only what was likely to happen. Washington's crossing the Delaware to capture the Hessians is an instance, from American history, of taking advantage of this. History affords hundreds of similar examples. Poor generals lapse into this fallacy; great ones use it by consciously outimagining their opponents.
Peter excuses his marrying again after his fifth divorce by saying, "Statistics show that at least half of American marriages are happy. My luck is bound to change this time."	Even if the chances were nine out of ten, he would be bound to do nothing at all. He might still have bad "luck" in his choice of brides. As a matter of fact, if the statistics Peter quotes are correct, he still has about an even chance of needing another divorce. A likely explanation for Peter's persistent bad luck is a character flaw that bars him from achieving a happy home life - no matter what the general statistics reveal. Unlike the tossed coin which has no ties with the past, Peter's matrimonial problems surely have.

DIVERSIONS

To make a diversion is to lead discussion away from the issues by directing it elsewhere. There are many devices for doing this: resorting to humor, bringing up irrelevant material, interrupting thought with trivial protest! or questions, appealing to pathetic circumstances. There is no complete defense against diversions. Their function is to make the audience forget the point or become unwilling to consider it. After a successful diversion the audience may find it tedious to get back to

business. To be sure, audiences generally do have a sense of fair play which demands that individuals be given a hearing, and people may resent a diversion if they recognize it as such; so sometimes it is effective to expose a diversion and then appeal for orderly discussion. Diversions, like almost all other fallacies, occur also in writings and speeches where no party is responsible to answer and where the alertness of the audience or reader is the only guard.

As an introduction to the general problem of diversion, we will examine Hitler's use of this device in one of his great speeches, that delivered at the Industry Club in Dusseldorf on January 27, 1932. This was a year before the Nazi Revolution, and, though Hitler was facing a rather skeptical audience of industrial leaders of the Ruhr area, the speech is credited with winning substantial support for National Socialism from among these leaders. Hitler began with a feeling that the audience shared with him, dilating on the nationalistic and anticommunistic nature of his movement. Judging from the record of applause, this approach impressed the audience considerably. Then he proceeded to defend his antidemocratic objective as follows:

If anyone today wishes to fling at me as a National Socialist the gravest possible accusation, he says: "You want to force a decision in Germany by violence, and we are bound to protest against this. You want one day to annihilate your political opponents in Germany, But we base our stand on the constitution, and we are bound to guarantee to all parties the right to exist." I have only one answer to this. Translated into practice it means: you have a military company and you have to lead that company against the enemy. But within the company there is complete liberty to form a coalition, [laughter] Fifty per cent of the company have formed a coalition on the basis of love of the Fatherland and of protection of the Fatherland. The other fifty per cent have formed a coalition on the basis of pacifism; they reject war on principle; they demand that freedom of conscience should be inviolate; and they declare that to be the highest, the sole good which we possess today, [laughter].

Let us look carefully at the diversionary technique used. Hitler begins by bringing up what he himself terms "the gravest possible accusation," namely, the Nazi resort to violence in order to establish a dictatorship. He answers this serious charge with ridicule. There is a topical joke in "liberty to form a coalition," a reference to cabinets formed by coalitions of several parties, an unpopular feature of government under the Weimar constitution. Thus, the fanciful notion of a military company directed by a miscellaneous assortment of politicians is advanced to present a ludicrous picture to the German audience. But the problems of leading a small army unit and administering a government are not analogous (see #4), and, in any event, reference to coalition government is obscurantist since dictatorship is not a necessary alternative.

Hitler proceeds to heighten the grotesqueness of the image of a coalition commanding a small military unit by fancying its elements incompatible - half patriots and half pacifists. This draws a second laugh and opens the way for a further diversion (not quoted) whereby Hitler proceeds with a violent attack on toleration of pacifism, an unpopular minority idea and hence a convenient straw-man. Thereafter the speech continues without ever taking up the charge of overthrowing democracy. Indeed, if this crucial accusation had been treated in a thoughtful way, it might well have raised doubts and made this particular audience ponder.

32 **Humor and Ridicule: "lost in the laugh"**

Continuous humor sometimes is diversionary. Sarcasm, parody, mimicry - all the various forms of ridicule - are impertinent intrusions in argument. Yet heaven help the man incapable of laughing where the occasion warrants. As audience members we will wish to enjoy any good sallies - and then to scrutinize the argument.

EXAMPLE	COMMENT
"My opponent's position reminds me of a story..."	Let us hope the story is a good one. If so, we will be entertained and then we may return to reason. If the story is irrelevant, then it is an impudent diversion, and if the story has a point which allegedly applies to the issue, then we will have to consider whether it does in fact apply.
In a college debate on public development of power, one speaker got a ludicrous effect by talking about the "dam sites."	It would be crude punditing to punish a punster. But continuous humor is sometimes an ally against thinking.
Clemenceau is said to have once remarked, "Fourteen points, fourteen points! Why the Lord Almighty had only ten!"	The quip deserves a laugh, but it is not an innocent intrusion on the discussion. It seeks, by belittling Wilson's program, to put the audience into an unreceptive mood.
In the course of a parliamentary debate the young Disraeli was once heckled with cries of "Jew! Jew!" He responded: "My people were kings and princes, when yours were galley slaves."	NO COMMENT,
When Darwin's Origin of Species set the world to debating the theory of evolution, Bishop Wilberforce	Huxley is reported to have arisen slowly and deliberately. "I asserted, and I repeat, that a man has no reason to be ashamed of

and Thomas Huxley appeared together in a public discussion of the topic. The bishop made a skillful speech without seriously examining the scientific evidence. "Then, turning to his antagonist with a smiling insolence, he begged to know, was it through his grandfather or his grandmother that he claimed his descent from a monkey?"	having an ape for his grandfather. If there were an ancestor whom I should feel shame in recalling, it would be a man, a man of restless and versatile intellect, who, not content with an equivocal (sic) success in his own sphere of activity, plunges into scientific questions with which he has no real acquaintance, only to obscure them by an aimless rhetoric, and distract the attention of his hearers from the real point at issue by eloquent digressions, and skilled appeals to religious prejudice."
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[The description of Wilberforce's conduct is taken from "A Grandmother's Tales," Macmillan's Magazine, vol. 78, p. 433; Huxley's retort is quoted from Woodbridge Riley, *From Myth to Reason*, p. 316. Very likely none of the several versions of this celebrated incident are wholly accurate.]

33 Demand for Special Consideration

Is there a man with soul so dead that he has never succumbed to an irrelevant appeal to pathos, sentimentality, human sympathy? Drawing attention to pathetic circumstances is an age-old refuge of individuals in difficulty - it is the most obvious form of demanding special consideration. This demand particularly recommends itself to unscrupulous pleaders, since it works by taking advantage of the audience's feelings of decency and common humanity.

EXAMPLE	COMMENT
Paul is on trial for a murder committed in California. His lawyer, Peter, points out to the jury that Paul is a veteran with several decorations, that he has a wife and six children, and that he is the sole support of his aged mother.	"Murder is the unlawful killing of a human being, with malice aforethought." Penal Code of California, section 187.
A student approaches his teacher at the end of the term: "My grade in this course will probably decide whether or not I can get into dental school."	Fortunately for the peace of mind of teachers, academic records are a matter of numerous independent grades to which no single instructor ordinarily contributes a decisive share. In any event, grades measure a student's accomplishment, not his needs.

34 Clamorous Insistence on Irrelevancies: "red herring"

One way of hiding the weakness of a position is to draw noisy and insistent attention to a side-issue. The side-issue may be the character of an opponent, who is damned vigorously while the argument gets lost in personalities (see #20). Or it may be some movement or group that serves as a whipping post. This, the red-herring technique, is the tactic of the familiar speaker who, instead of meeting the real question, turns his talk into an attack on international communism, or Wall Street, or whatever else will deflect the attention of the audience. Such speakers often lose all sense of proportion, they pettifog, they make much of little and little of much. They talk of anything except the issue, at great length, with much noise and sawing of the air. We all are addicted to this fallacy. It is, of necessity, the patron saint of those being overwhelmed in argument.

EXAMPLE	COMMENT
Accused of having misbid his hand, Mr. Peter points out that his partner is always picking on him. "How can I play good bridge when nothing I do pleases you?" he complains.	A relatively innocent side-issue. Moreover, there is a flavor of justice in the complaint; it is hard to think well while being constantly criticized. Notice, however, that Peter merely defends himself, not his bid.
In an article entitled Does Retroactive Punishment Endanger Civil Liberty? a jurist writes in a Nazi law review: "Shocking though the concept of retroactive punishment may be to the liberal concept of justice, it must be recognized on occasion that such punishment is both necessary and right: otherwise clearly immoral acts will go unpunished. For example, in 1902 a certain individual who completed a phone call with a lead slug was brought to trial but had to be acquitted since this act did not amount to theft or to any other offense for which a penalty was then prescribed.	This is a phantom issue. Crime in any nation is a phenomenon with an annual volume of thousands or even hundreds of thousands of cases. From a criminological point of view it is not a problem when an occasional instance of anti-social conduct goes unpunished, though from a moral point of view it is repugnant. In any event, the great cause of escape from legal punishment is not the occasional loophole in law, but the difficulties of apprehension of criminals and proof of their guilt. Though occasional loopholes are bound to occur, appropriate legislation is readily available to close them for the future. To cure the evil of one or a few rogues going unscathed by granting the state the power of retroactive

When such loopholes exist, retroactive punishment is needed to vindicate the law."	punishment, a power notoriously open to abuse, is to apply a violent remedy to a slight malaise.
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35 *Pointing to Another Wrong*

Though many give lip service to the adage "Two wrongs do not make a right," few are not tempted to mitigate blame for wrongs on one side by citing those on the other, Justice seems to demand that that one who complains of wrong-doing should himself have "clean hands." Powerful advantage can be taken of this feeling to turn away attention from charges that are difficult to answer, by showing that the accuser himself is guilty of misconduct. This device is an effective rejoinder in controversy since it both deflects attention from the original grievance and creates sympathy for the accused party. And in the practical affairs of life a sort of rule-of-the-game approach is often adopted so that the misdeeds of one side are set over against those of the other. Yet even when the countercharges are deserved, all that is demonstrated is that neither side is right when both are wrong. Recently, when certain teams in a big football conference were found guilty of paying their players, moderate penalties were assessed against these teams. Some sports writers and alumni opposed the penalties, alleging that other teams in the conference were equally guilty of the forbidden practices. If these allegations were substantiated, then the other schools should have received equal penalties; justice certainly demands equal treatment for all. But the apologists were by no means urging the imposition of further penalties, but rather the suspension of the penalties already imposed. As in this instance, the citation of other wrongs is at its best a generously motivated confusion of the issue. At worst, crimes can be condoned and criminals excused or even praised because others have committed crimes against them.

Sometimes man's propensity for revenge creates a sort of tradition which bedevils human relations by piling wrong upon wrong for decades or even centuries. Thus individuals have their vendettas while whole peoples nourish traditional hostilities on a diet of past grievances. The historical animosities between England and Ireland, France and Germany, Russia and Turkey, Japan and Korea, of colonial areas throughout the world and their former colonial governors - all these provide instances in which old grievances remain living forces dominating present relationships.

EXAMPLE	COMMENT
Pointing out that Breslau had been a German city for over five hundred years before 1945, a debater maintains that the action of driving the German inhabitants out of the city at the conclusion of World War II was a great injustice to the people concerned. His opponent replies, "I don't see that it was wrong. After all, when the Germans had the upper hand in Warsaw, we all know how they behaved."	The question raised is whether the German inhabitants of Breslau were treated justly. No amount of past injustice has any relation to this problem. In fact, the more moral indignation the speaker feels against Hitler's brutal creation of "living space" by the sword, the more sympathetic one might expect him to feel toward victims of similar treatment anywhere, even in Germany. The opposition argument amounts to this: "Injustice has been done in the past to Poles living in Warsaw; therefore, I favor a further act of injustice to Germans living in Breslau."
Paul: "Why are you late, friend Peter?" Peter: "Huh? Since you failed to show up at all on Friday night, you live in a glass house, Paul. You really shouldn't throw stones."	The moral of the glass house adage is nonsense. There is also an ad hominem appeal here (see #20).
Paul: "Liberty USSR style is a travesty on individual freedom. Free speech does not exist, voting is a farcical ratification of official candidates, to strike is punishable as treason, the slightest opposition is dealt with by the secret police and the slave labor camp." Peter: "I don't think it behooves us to criticize other nations in view of our racial discrimination and the way legislative investigations are carried on in this country."	Paul advances the proposition "Liberty USSR style is a travesty on individual freedom" and brings forth certain supporting facts. Peter ignores the supporting facts; instead he alleges other wrongs. Peter's argument, called by Arthur Koestler the "soul searching fallacy," should not be permitted to hamstring thought or action. Saints and sinners alike have a right to rational criticism, and the thief confined in his cell may justly complain when his watch has been stolen.

Francis Bacon, the great English philosopher, served as Lord Chancellor under James I. In 1621 he was convicted of accepting bribes in chancery suits. All his biographers have pointed to the widespread practice of the jurists of the day of accepting "presents" from contending parties.	A climate of opinion condoning practices that are recognized as immoral does tend to mitigate the culpability of an individual who is merely doing what everybody else does. The evidence offered by Bacon's biographers is relevant for assessing the grievousness of the crimes for which Bacon was convicted. Yet it is significant that Bacon himself did not rely on the prevalence of the practice when arguing in his own behalf. He said simply, "I do plainly and ingenuously confess that I am guilty of corruption, and do renounce all defense. I beseech your Lordships to be merciful to a broken reed."
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36 *The Wicked Alternative*

There is a legitimate form of argument which defends one thing b) attacking its opposite. If a speaker can prove that heavy consumption of alcohol is harmful, he gains support for the thesis that temperance is beneficial, provided that he can show that temperance is the opposite of excess and if we allow that it is beneficial to avoid the harmful.

It is clearly irrelevant to support A by denouncing B, unless B is the opposite of A. Yet people often do this. They praise San Francisco by running down Los Angeles, just as if allowing a merit to one city would involve disloyalty to the other. They seek to win admiration for so-called serious or classical music by sneering at so-called folk or popular kinds of music. If they are in the other camp, they call classical music "long hair" or "high brow." It must not be supposed that all occurrences of this common fallacy are as lightweight as these instances.

EXAMPLE	COMMENT
A famous modern poet, in an essay on "poetic truth," sought to establish his claims for the importance to our culture of the poet's vision and insight. He soon ran out of instances to praise, so turned his rhetoric to an intemperate attack on "positivism," and "the substitute truths of science," which, he said, lead only to "goof pills," to the vivisection and "torture" of dumb animals, and to "the mushroom cloud of death."	What this poet should be doing is making clear what distinction he intends to draw between "scientific truth" and "poetic truth." Attacks on selected instances of scientific practice that elicit his disapproval are irrelevant unless it can be shown (a) that this practice is typical of the application of scientific truths, and (b) that this truth is so related logically to poetic truth that the disadvantages of the one are the advantages of the other.
Peter writes an article attacking the British system of socialized medicine. He concludes, "The difficulties experienced under the National Health Service in Britain should confirm the opinion that the organization of the medical profession in America is satisfactory."	Peter is right in assuming that British experience with socialized medicine can be applied by analogy to the United States (see #4). If the British system has not worked well, then a system similar to it would not be likely to succeed in this country. But a pointing out of shortcomings in the British system does not establish the affirmative merits of medical organization in America unless it can be shown that the American system is the opposite of the British plan.

37 *Nothing but Objections*

In the complexity of affairs there are few designs or proposals so well considered that objections cannot be raised to them. A man must often choose the lesser of evils and try, if he will accomplish anything at all, to dedicate himself to a course of action in spite of grave misgivings.

Why choose the lesser evil? Why not, in such cases, reject all proposals? The answer is that sometimes there is no escape from choice; to fail to decide is to "decide by default." Suppose there is a bond issue before the electorate and today is polling day. You know that the conditions the bond issue is designed to remedy are, as you say, intolerable, but you also know that many objections are raised against the proposed remedy. Now in your community a bond issue must receive two-thirds of the votes to pass. It is clear that if you cannot make up your mind to vote for the issue, though you do not vote against it (leaving the spaces blank), you in effect help defeat it.

In the homely case it is clear that often a man who cannot make up his mind ends in making a "decision by default." People say, "Peter could not decide to accept the invitation until it was too late"; in effect he decided not to accept it. "When the inflation began, Peter could not make up his mind whether to invest in stock or in a piece of real estate; his money is still in the bank." The inability to decide between two becomes a decision against both. We have already remarked on the donkey that starved to death when placed at an equal distance between two bundles of hay (see #9 b).

Sometimes an opponent to a measure will take account of this incapacity of some persons to decide for a plan of action when they have misgivings, and will exploit it by raising continuous objections until the defeat of the proposal is assured.

There is here the fallacy of objections. One can find objections to almost any plan - the fallacy is failing to weigh in the balance the objections to the alternatives. It is apparent that this is a fallacy of the audience; it is they who must decide and who fail to weigh the counter-objections.

This fallacy was first analyzed at length by Richard Whately, well over a hundred years ago, who summarized, "There never was, or will be, any plan executed or proposed, against which strong and even unanswerable objections may not be urged; so that unless the opposite objections be set up in the balance on the other side, we can never advance a step."

EXAMPLE	COMMENT
In late 1953 the Administration proposed a "new look" for defense, based on the potentiality of "massive retaliation." Many persons objected that concentration on the building of a long-range airforce might leave the nation unable to resist "new Koreas."	Without going into the merits of this controversy, we can easily see that no matter what course the Administration might have taken, very serious objections could be raised to it. Yet to allow things to go on in the old way of "balanced forces" and enormous expenditures would itself constitute a decision of the gravest sort. There is no suggestion in this example that all those who opposed the concept of massive retaliation were exploiting people's propensity to commit the fallacy of objections. But the public discussion was marred by the fact that numbers of speakers and writers failed to weigh the admitted difficulties of this concept against those of the practical alternatives.
Swain Peter, courting Hortense, delayed and delayed the decision to propose marriage. He saw all sorts of difficulties - too little money, doubts about his compatibility with Hortense, fears of having his suit rejected - and found himself simply unable to propose. Hortense waited with patience for a long time. She's now married to Paul.	Peter is just as much a bachelor today as if he had decided definitely not to propose.

38 Impossible Conditions: "the call for perfection"

This maneuver is related to the fallacy of objections (#37). In a discussion concerned with reducing theft in a locker room, all would recognize the suggestion, "If men were taught to be honest, we would need no locks" as a mere idle observation. In less obvious situations the contention that mankind should first be changed or perfected in one way or another may be successfully interposed to dull the blade of action.

EXAMPLE	COMMENT
Every time in recent years that an administration has proposed a legislative program for extending the benefits of social security, the proposal has met with a determined opposition. Among other objections advanced, one can usually encounter some form of the following: "We must pause to re-examine the whole philosophy of this movement. Americans are constantly being urged to attack poverty and insecurity by extending government help or raising wages again or enlarging the scope of benefits. Man does not live by bread alone. If we suffer from domestic insecurity, it comes from the spiritual poverty of our people and our lack of faith in ourselves. The crying need for our age is not the patching up of our institutions, but a reform of the human heart."	Moral improvement of man is worthy of constant seeking. Yet if social action in this world had to wait upon "a reform of the human heart," the practical solution of problems would come to a dead stop until the millennium.

<p>Student Peter reads the Supreme Court decision declaring unconstitutional racial segregation in public schools. "Well," says Peter to his roommate, "I am sure that most people are aware that this problem must be overcome in the United States. But I'd think the court would realize racial discrimination cannot be ended by operation of law. People will have to change their attitudes, and then the segregation problem will settle itself."</p>	<p>There are two things to notice about Peter's argument. First, it is a call for perfection as a prerequisite to action. Second, Peter indulges in an oversimplification, thereby creating a straw man which he proceeds to knock over as if this were impressive argument. Few people, certainly not the Supreme Court justices, think that a legal opinion or any other simple remedy will solve the problem of discrimination. So when Peter declares "racial discrimination cannot be stopped by operation of law," he is asserting what no one denies. That is, Peter's statement is obviously true, assuming he means "stopped solely by operation of law," which is what he must mean in order to put bones in his straw man. If Peter had said "racial discrimination cannot be stopped at all by operation of law," he would raise a real issue. His oversimplification avoids this issue. What he should be discussing, apart from the legal soundness of the decision, is whether or not law is a partial remedy for racial discrimination.</p>
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39 *Abandonment of Discussion*

Refusal to carry on argument is so palpably not an argument that one might question the necessity of identifying this action as a fallacy. In its crudest form - where Peter stops talking and begins to pummel his opponent over the head - no one can fail to realize that reasoning is at an end. The fact, however, is not always evident when discussion is abandoned verbally. Refusal to argue a matter may take the form of claiming that discussion is unnecessary, irreverent, indecent... unmoral, or unpatriotic, and the like, or it may be by resorting to abuse. Personal attacks against an opponent's physical appearance, dress or mannerisms will succeed only where the vulgarity of the audience permits. Abandonment of discussion by these means is often combined with fallacies of the red herring, of ridicule, or of origin.

EXAMPLE	COMMENT
Paul remarks, "It is a sort of false chivalry that tells us not to speak ill of the dead. After all, we need not fear harming the dead: it is toward the living that our tongue should be charitable." Peter, shocked by what he considers Paul's irreverence, replies sternly, "Paul, you lack respect even for death itself."	Paul is challenging a generally accepted custom of our culture. Peter's rebuke amounts to abandonment of discussion since he makes no attempt to examine the soundness of the cultural attitude or of Paul's observation. Peter's comment illustrates the devices of implying that an opponent's position is scandalously beneath notice.
Paul, a resident of A-town, is comparing the city planning and zoning development of A-town and B-ville. He concludes, "B-ville, without any particular natural advantages, has been made into a more pleasant place to live than we have achieved here." Peter jeers, "Why, Paul, I suggest you move right over to B-ville."	Maybe an effective silencing of the critic, but not of the criticism.
Dr. Johnson, after hearing Bishop Berkeley expound his view that there is no material substance, was asked by friends what he thought of Berkeley's idealism. The great man replied by kicking a stone.	Johnson's refutation of Berkeley, a form of refusing to discuss the "absurd," is jestingly referred to by philosophers as the invention of a new fallacy, the appeal ad lapidem (to the stone).

PART III: LOGICAL FALLACIES

The mistakes and tricks in argument, so common in the markets and parliaments of every-day life, are of small interest to the logician. The logician might allow that faulty generalization, wishful thinking, etc., are sources of error in discussion. On the analogy of a manufacturing process (see Introduction), he would perhaps admit that if inadequate materials or human aberration lead people to maintain false premises, they should hardly be surprised when their conclusions are unreliable. But the logician has as his only concern with fallacy the avoidance of error in the processes of argument. He is ceaselessly watchful for breakdowns in the functioning of processes designed to produce valid conclusions. As to the premises from which the conclusions are drawn, he merely assumes them true or false for the purposes of his demonstrations. The logician, as logician, does not care at all what fallacies might have entered into the formulation of the factual premises he is borrowing. As an ordinary man, he may be tremendously concerned, like the rest of us, for on the truth of some moral or political premises may hang the happiness and even the future of the race. But in logic, taken in isolation, the problem of error is a formal problem, quite like mistakes in mathematical proofs. Such mistakes are of great importance, nonetheless, and if they are not avoided, the most vigilant care in safeguarding the purity of the premises will be wasted, since the conclusion will be contaminated. The history of reason, since the invention long ago of logic, is in part the history of guaranteeing the purity of the processes of argument.

Two of the most important notions in the history of reason are *logical truth* and *validity*. The elements of these notions must be understood before there can be any profitable discussion of the processes of argument. Though they have been prominent in analysis since the days of Greece, recent decades have seen great progress in the understanding of them. The subject still bristles with difficulty for logicians and mathematicians. Yet the elements perhaps can be explained with sufficient clarity for the present purpose.

LOGICAL TRUTH

There are two kinds of true sentences in discourse. One kind is empirical, which is to say, derived from experience. This is what people most often mean when they say that something is true or is a fact. When someone says, for instance, "It is almost four o'clock," the kind of truth involved is empirical: the sentence states a fact or not, depending on the time. All scientific observations and historical statements have this kind of truth or falsity. "The hyena belongs to a species somewhere between dogs and cats." "It was in the Ford Theatre that Abraham Lincoln was assassinated." "The narrator in Moby Dick calls himself Ishmael." "I was driving sixty miles an hour in a twenty-mile zone." There are sometimes great difficulties in ascertaining the truth of empirical sentences or even in understanding what it means to say of such sentences that they are true. Some of these difficulties have been explored in the section on material fallacies. But it can be seen already that where one is content with the truth of such sentences, one can employ them as premises in argument. For the present, we are concerned with the second kind of true sentences, those that are *logically* true.

Of logically true sentences there are simple varieties that most people are already familiar with. Consider the following sentence, "If today is Tuesday, then today is not not Tuesday." This sentence is true on Wednesday or any other day as well as on Tuesday. "If today is not Tuesday, then it is not not not Tuesday." Thus if there is no negative in the *if*-clause, any number of true sentences can be made out of the whole conditional by adding even numbers of *nots* to the *then*-clause. And where there is a negative in the *if*-clause, one can know that the whole conditional is true if there is an odd number of *nots* in the *then*-clause, no matter how large a number. These sentences are true because of the way "if-then" and "not" are used in English. "If a, then not not a" is always true; in fact, logicians say it is "trivially" true. No matter what sentence, including a false sentence, one substitutes for a, the complex sentence in this case will be true. It is trivial because nobody learns anything about the world of fact from such a sentence.

"If he's an uncle, he's a male" is also trivially true, not only because of the syntax of "if-then," but because of the meanings of "uncle" and "male." "If it is red, it is colored" is likewise true because of the meaning of "red" and "colored." Such sentences explore the semantics of a language for connections and implications between the meanings of the various terms. They may give information about the language in the sense of making evident those relations not previously clear, but they give no other information. Arithmetic in a similar way makes clear the relations among numbers. David Hume, the first to understand well the distinction between empirical and logical truth, gives the example "three times five is equal to the half of thirty." The truth of this proposition, he says, can be ascertained without assuming any knowledge of the world of fact; it is known to be true by reasoning alone - to *deny* it implies a contradiction. Let us try to deny it, that is, assume that it is false:

Assuming, $3 \times 5 \neq 30/2$
Then, $5 + 5 + 5 \neq 15$
Or, $15 \neq 15$

The above contradiction, saying that fifteen does not equal fifteen, is implicit in the meanings of the various numbers and in the use of the signs for division, addition, etc. To deny that three times five is the half of thirty involves denying that fifteen equals fifteen. This is a contradiction, since it is prerequisite for intelligible discourse that a term be taken in the same sense

whenever it occurs in the same context - that it be identical with itself. Such mathematical propositions, Hume says, are true by necessity, since one cannot assert them false without contradiction, in fact, cannot even imagine them false.

There is a third variety of true sentences which logicians frequently speak of, "true by definition." There are all sorts of definitions, but it is not the truth of the definitions that logicians have in mind. A dictionary definition can be a correct report of usage, and hence regarded as true like any other report, but this would be empirical truth, which logicians are not concerned with. Moreover, most of the other kinds of definition are not reports of usage.

In mathematics, for instance, where often one symbol is simply substituted for another by a process of definition, it would be meaningless to ask whether or not the definition is true. In general argument, persons often introduce a special definition of a term which may or may not conform very closely to ordinary usage - that is not the point of the definition. In such cases the definition is intended as a decision to use the term in a particular way for the duration of the argument. This is done, among other seasons, to control the ambiguity of ordinary usage. Clearly it is also meaningless here to ask if the definition is true. How can a decision be true or false? It can be kept to or overlooked. (It is a grievous fallacy in argument to take advantage of this convention, to define a term in one way and then slip over into conventional meanings - see #45.)

What logicians mean when they speak of "true by definition" is the status of a sentence which is implied as a logical consequence of a definition. Suppose in the course of an argument I define "extravagant" as "spending more than you earn." Then I demonstrate that my friend has consistently for years done just that. It follows that my friend is extravagant as defined. The sentence, "My friend is extravagant," granting the other premise about his spending, is true by definition. Like the other kinds of logical truth, definitional truth is also innocent of any factual substance - the only information it gives is that if you define a term in a certain way, then, the conditions of the definition being met, you can use the term.

These, then, are the three most important kinds of logically true sentences, true by definition, true by the meanings of words, true by the use of syntactical elements. They give no information about the world, but only about the use of language in reasonable discourse. It is this lack of material content that is referred to when it is said that such truth is tautological or trivial.

Not all logical truths are as obvious as "Mars is inhabitable or not." Many sentences in books of logic are true by analysis, as logicians say, but some of them provide the greatest difficulty in that analysis. In less rigorous fields, students are sometimes warned against tautologies. A student theme replete with them may be inane - of course, this is what teachers rightly protest - but at least it contains some certainly true sentences, since all tautologies are true.

VALIDITY

The reason for the importance of the notion of validity is connected with what has been said about logical truth. If an argument is valid and if the premises are true, then the conclusion must also be true. This "new" truth is also essentially empty of any new information about the world - it merely reformulates what was already expressed in the premises. It is a mere consequence of truths already stated - and sometimes, as in arithmetic, the truth of the premises themselves is merely logical, consisting of definitions, tautologies, and the like. The conclusion, however, may embody important novelty, and the mathematician feels himself possessed of a new truth indeed. The student of geometry who masters the Pythagorean theorem is often struck with the fact that this very complicated and unexpected result is a consequence of a chain of reasoning reaching back to a handful of postulates and axioms. If there were men of godlike intellect, as the French philosopher Laplace pointed out, they would immediately see all the possible consequences of whatever consistent set of postulates one could offer them. But men are not gods and thus are capable of surprise.

Moreover, people often wish to test the consequences of their premises without being in a position to say whether or not they are true. The "postulates" may not be obviously inconsistent, but if they are inconsistent, this will become evident as their consequences are explored. It is indifferent to logic whether or not the premises are well founded in experience. One can assume them true and explore the results. Similarly, in ordinary things, one need not wait for certain proof of some propositions before finding out what other propositions would be true, granting them. For instance, some astronomers have asserted that lichens probably grow on the planet Mars. Now lichens are a fungus living symbiotically with an alga. With this fact as a premise, it is easy to construct an argument proving that the cooperative phenomenon of symbiosis occurs on Mars, if one assumes other premises, including "There are lichens on Mars" to be true. Sometimes propositions are actually known to be false, but it would be interesting to see what would be the case, if only they were true. No language has succeeded in becoming an international language, neither Esperanto, nor Lo, nor Basic English, but it is certainly legitimate to speculate on the consequences of the adoption of one or another of them. The results of such speculations may actually suggest the design of a practical course of action.

The process we have been describing is possible only because some propositions can be shown to entail other propositions. If one understands the notion of entailment in the sense that conclusions can be entailed by premises merely on the assumption that the premises are true, then he is getting close to understanding what is meant by speaking of *valid* arguments.

It is the validity of the argument that guarantees the production of true conclusions when they are entailed by true premises. Thus when a conclusion is derived from premises, we cannot know that it is true because of this fact, unless we know that

the premises are true. What we can know in many well understood forms of proof - such as the syllogistic form, which will be examined in some detail - is whether or not the argument is valid in itself. If the conclusion necessarily follows, then the argument is valid; if it does not, then this is invalid. "If this is an omen, then it is also a portent. But it is an omen. Therefore, it is also a portent." There may be no such things as omens or portents, but the argument is valid.

We will not attempt to define "validity" in the abstract. Let us rather adopt the following rule: *An argument is valid if and only if to assert the premises true and the conclusion false involves a contradiction.* The notion of validity, it is seen, depends upon the notion of truth. Yet there is a sharp distinction between validity and truth.

All the cases we have been discussing can be shown to be consistent with this rule. The most important case occurs when the premises are in fact true. Here a new truth emerges, for the conclusion is necessarily true, by the rule. Most every-day arguments try to be of this sort. Another case is that of dubious premises assumed to be true for the sake of testing the validity of the argument. "If all the people in New York have purple eyebrows, then they do not believe in Baal. But all the people in New York do believe in Baal. Therefore, they do not have purple eyebrows." The premises are presumably false; it is unlikely that all the people in New York believe in Baal, or that, if they do, this is related to their not having purple eyebrows. Yet the conclusion follows from these premises. Moreover, this conclusion seems in fact true, though foolish. The truth of the conclusion must be independent of these premises, since they are false. This, then, is a case of a valid argument leading to a true conclusion from false premises. How is it seen that the argument is valid? By the rule, because the rule states only that the conclusion could not be false if the premises were true, and we can see that this is so in the example. What we do to see it is assume the premises true for the sake of the argument (as people say), and then observe if the conclusion must follow. This may be hard to do in an absurd case like the above; for this reason it is customary to show the shape of the argument by the use of a notation. A simple notation will show that the argument about the purple eyebrows has the shape: "If a, then not b, but b; therefore, not a." All arguments in this shape are valid. Let the student experiment with this shape 1) using true premises, and 2) using false premises leading to conclusions in fact false.

It is a fallacy, in a way the most fundamental fallacy, to confuse validity with truth. Persons are often convinced of the truth of a proposition because they can see that it follows rigorously from certain premises, while failing to notice that the premises are by no means certainly true. The Nazis convinced themselves that the Germans should rule the world by asserting (a) the master race should rule the world, and (b) the Germans were the master race.

It also happens that an argument seems sound to some people because the conclusion is acceptable and they are told that it derives from premises which they see to be true. I may reason (a) if I can afford to build my own home, I shall not have to go on paying rent, (b) but I can't afford to build my own home, (c) so I shall have to go on paying rent. The conclusion may be a true proposition and so may each of the premises, but the argument is still invalid, since the conclusion *could* be false, though the premises are true (see #39). When this happens, the argument does, in a way, contain a statement that is false. This is the statement, implicit in the order of the propositions, or partially avowed in some such expression as "therefore" or "hence" or (as in the example) "so" - the statement that the conclusion follows. In valid arguments this implicit statement about the argument is true, in invalid arguments, false. Sometimes one explicitly: "it follows that," "Q.E.D.," "you have to admit that," and the like.

Let us turn now to a simple traditional example which applies what we are learning about the difference between valid and invalid argument. (The reason for using the letters "M," "S," and "P" will become apparent.)



The scheme on the left can be seen intuitively to be valid. That on the right seems to be a mistaken version of it. No matter what values we substitute for the letters, just as the formula on the left will result in a valid argument, mistaken formulas such as that on the right will result in an invalid argument.

Valid: "All good students like to argue; all our freshmen are good students; so all our freshmen like to argue."

Invalid: "All good students like to argue; all freshmen like to argue; so all freshmen are good students."

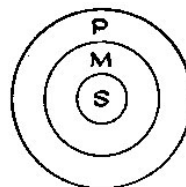
Or another invalid case: "All loyal Americans are anti-communist; the American Only League are anti-communist; so the American Only League are loyal Americans."

Suppose the premises perfectly true, the conclusion does not follow - the League might be fascist or in some other way both anti-communist and still not loyally American. Even if true also, the conclusion still does not follow.

The relationship between the propositions of a syllogism can be diagrammed by the use of circles to represent the classes involved. In the case of valid arguments there is no way to draw the circles to avoid showing the conclusion true. Take the simple form already given:

All M is P
All S is M

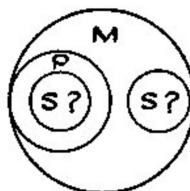
so All S is P



The argument is revealed to be invalid if there is any place permitted by the statements made about the classes in the premises so that one can escape the position required by the conclusion. Let P represent the class of loyal Americans, M the class of anti-communists, and S the America Only League. Then the invalid example just cited outlines and diagrams as follows:

All P is M
All S is M

so All S is P



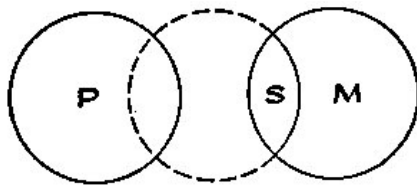
The process is to take the premises as giving directions for the construction of circles. In a valid argument they compel the circles to show that the conclusion is inescapable. Circle diagrams are a sort of game in which one seeks to embarrass the contention that the conclusion follows. If one wins, then the argument is invalid. Let the reader invent arguments constructed according to the above valid and invalid examples. He will gain some insight into the notion that validity is a matter of structure, of form, not simply of the truth or falsity of the premises.

There are large numbers of valid forms of argument. In the discussion that follows we confine ourselves to the traditional forms. We choose to do this, as most of the formal fallacies have been discussed in the literature of the syllogism (a form of the syllogism is given at the left on p. 141). Moreover, as the use of the circles shows, the validity of the syllogism can be seen intuitively and thus does not require the elaboration of difficult formal systems.

Now there are theoretically as many formal fallacies as there are ways to argue invalidly, that is, to make mistakes in arguing from premises to conclusions. But our concern here is with commonly occurring and well recognized errors. Some of the logical fallacies were known to the ancients; philosophers in the Middle Ages were often adroit at detecting them. They persist, nevertheless, to our day, and every educated person should know the name and face of them.

40 The Undistributed Middle Term

The scheme given at the left on page 141 is typical of the syllogism. For variety let us take a slightly different format of a valid syllogism, illustrate, schematize, and diagram it in circles:



No M is P
Some S is M

No raw fish is edible
Some Japanese dishes are raw fish

so Some S is not P

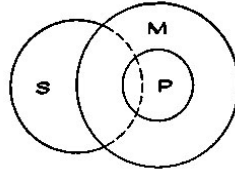
So some Japanese dishes are not edible

It will be seen that in this traditional form of argument the conclusion is entailed by two premises taken together. When the classes of raw fish, edible things, and Japanese dishes are related as the premises require, the conclusion is inescapable. Any argument so constructed is valid. The circles show this clearly. The conclusion "Some Japanese dishes are not edible" is true if the premises given are true.

Note that both premises relate to the same subject matter. This means only that there is a concept common to both, M in the formula (*raw fish* in the example), which, once it has related the other two classes of the premises, disappears - it does not occur in the conclusion. This is called the "middle term" (hence "M"). The most important rule of the syllogism is that the middle term must be distributed - important because frequently violated. In the invalid examples about the freshmen and the American Only League, the middle term was not distributed; in letters, every relevant case of P and of S is accounted for, but not every case of M. We must make clear what it means to say that a term is distributed.

In the formulas on page 141 both premises and the conclusion are "All" propositions. These are called universal propositions, since they refer to the whole universe under discussion: "All men must die. All dictators are men. Therefore, *all* dictators (thank God!) must die." Since such propositions give information about every case, the terms ("men," "dictators") are said to be distributed. As in this example, the formula shows another characteristic. The propositions are affirmative; they make positive statements, or, better, they do not contain the words "no," "not," or their equivalents.

It is permissible to use negative premises, provided that only one occurs in any given syllogism. "No good Christian is selfish" distributes both terms, since it states something that every last good Christian is not. It is clearly universal. There is another class of proposition, the non-universal or particular proposition. "Some men are not self-seeking" is evidently *both* particular and negative. Particular premises do not distribute their first terms; simply from the truth of "Some men are not self-seeking" we cannot know whether or not "Some men are self-seeking" is also true: we can know that "Some good Christians are selfish" is false merely from the truth of "No good Christian is selfish." Like the case of the negative premise, only one particular premise can occur in a given syllogism. It follows that if this particular premise is also negative, then the remaining premise must be both universal and affirmative. "All aggressive types (P) are self-seeking (M); some men (S) are not self-seeking (M); therefore, some men (S) are not aggressive types (P)." Let us look at this last example.



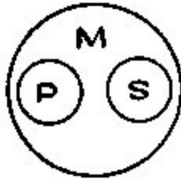
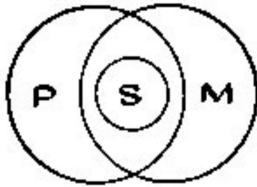
We see

1. there are two premises and a conclusion. This arrangement of sentences combines three terms in the following way:
 - a. the subject ("S") of the conclusion "men" occurs in the minor premise, and its predicate ("P") "aggressive types" in the major premise. (This is all that is meant by calling these two propositions "major" and "minor" premises, that is, in order, the premises containing the predicate and the subject of the conclusion. Which premise comes first is immaterial.)
 - b. the middle term ("M") "self-seeking" is distributed once: we know that no matter who the self-seeking are they are not *some* men;
 - c. there is no term distributed in the conclusion which is not distributed in the premises: "Aggressive types" is the only term distributed in the conclusion (by the negative, as above). Since the subject of the conclusion "men" is not distributed in the premises - it is particular - it may not be, and is not, distributed in the conclusion; the conclusion must be particular since the minor premise is particular.
2. that at least one of the premises is affirmative, and
3. that since there is one negative premise, the conclusion is negative.

These observations can be briefed as rules. All valid syllogisms observe them. If a syllogism is invalid, it has violated one or more of them. They constitute the necessary and sufficient conditions for a valid syllogism.

1. The two premises and the conclusion must each contain only two terms, and the syllogism altogether three and only three terms. These three terms are so combined that no term will be distributed in the conclusion which is not distributed in the premises and that the middle term will be distributed at least once.
2. At least one of the premises must be affirmative and one universal.
3. If one of the premises is negative, the conclusion must be negative, if particular, then particular.

A syllogistic argument which violates any of these rules is invalid. We shall now try to see intuitively, with the help of examples, why this is so.

EXAMPLE	COMMENT
<p>Peter argues. "All weapons ought to be abolished. All propaganda ought to be abolished, too. You can see that propaganda is a weapon."</p>	<p>Paul takes a sheet of paper and works out the argument, as follows: S = propaganda, P = weapons, M = things that ought to be abolished. Thus,</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;"> <p>All P is M All S is M</p> <hr style="width: 50%; margin: 10px auto;"/> <p>so All S is P</p> </div> <div style="text-align: center;">  </div> </div> <p>Paul says, "Your argument, Peter, is simply another example of the undistributed middle as found and diagramed on p. 142."</p>
<p>Peter tries again, "Well, I mean that propaganda is always a weapon and that some weapons are not safe in anybody's hands. So propaganda is not safe, either."</p>	<p>Paul applies the formulas again. In this argument, they are: S (subject of the conclusion) = propaganda; and P (predicate of the conclusion) = things safe in anybody's hands; M (middle term) = weapon (s).</p> <div style="display: flex; align-items: center; justify-content: center;"> <div style="margin-right: 20px;"> <p>All S is M Some M is not P</p> <hr style="width: 50%; margin: 10px auto;"/> <p>so Some S is not P</p> </div> <div style="text-align: center;">  </div> </div> <p>Paul shakes his head, "Just another undistributed middle."</p>
<p>"No proof exists that smoking causes tuberculosis. Some smokers do not get tuberculosis. So some smokers get tuberculosis from other causes."</p>	<p>This example is more complicated than the usual artificial examples employed in explanation. Peter's first premise seems to contain three terms, and so does the conclusion. But the classes might be stated in such a way that one of the terms would get absorbed. Even if this can be done, the argument is invalid because both premises are negative. Can the student see how other rules are violated?</p>
<p>"Some people get on my nerves; so some people better watch out!"</p>	<p>This is a truncated argument, called an enthymeme (see Introduction). It will depend on what proposition is supplied whether or not a valid argument results: "Some people get on my nerves; all those who get on my nerves had better watch out; so some people had better watch out!" Perfectly valid, if a little vapid. Note here that the major and minor premises are reversed. How is this demonstrated? (See #40) Can the student invent any plausible major premise which would make the argument invalid?</p>
<p>That man Jones was a member of Stone Throwers, Inc., and that organization is a branch of the Hit-and-Runners. It's plain as the nose on my face that old Jones is a Hit-and-Runner.</p>	<p>Too bad, but valid. The ambiguity of the term "branch" and of the "er" formations (in Hit-and-Runner), like some "-ite" and "-ist" formations, are not problems related to formal logic (see #10).</p>
<p>Peter says, "I've heard that Jones voted for Schmidt. He must be a Democrat."</p>	<p>Another typical enthymeme. To make this enthymeme into a valid argument one would have to supply an unlikely major premise: "AH those who voted for Schmidt were Democrats."</p>
<p>Scientist Smith belongs to the A.S.C., a scientific organization. Communists belong to the A.S.C. Therefore, Smith is a communist.</p>	<p>This is guilt by association. The argument seldom occurs so baldly. One begins by proving what perhaps is never denied, that Scientist Smith is a member of the A.S.C. Then one proves that Jones, Robinson and some other members of the A.S.C. are "communists." Finally, in a triumphant enthymeme, the speaker makes a gesture with his hands and leaves the audience to draw the conclusion. As the audience goes out, members can be heard to say to one another: "Think of an important scientist like Smith being a communist!" This conclusion is warranted only if association with communists makes Smith a communist himself.</p>

41 Suppressed Quantification

Let us look at this last example a little more closely. Notice that the major premise is "unquantified," that is, it is not stated whether every A.S.C. member is a communist or whether only some members are communists. The audience turned the proposition around, converted it, for the reason that it would be patently idiotic to say that all communists belong to this scientific organization - some of them are housewives or journalists. It would be true that some communists are A.S.C. members if all or some of the members are communists. Yet the speaker does not say "some." To do so might suggest a weakness of assertion. If the speaker does not quantify, the audience might be led to supply "only," thus: "Only communists belong to the A.S.C.," which is equivalent to "All members of the A.S.C. are communists." Now if the speaker wants the audience to supply "only," why does he not say it himself? Presumably because the statement would be false, and somebody might easily expose it as false. Though the speaker refrains from saying "only," the audience can still uncritically supply it, and the point is won for propaganda - and lost to reason.

It is a fallacy to exploit this ambiguity of the English language or to be taken in by it. "Women are able to endure more than men." All women, or some of them? "Children are cruel." Inevitably? Occasionally? Characteristically? "We live lives of quiet desperation." Most of us some of the time? All of us most of the time? Some of us some... ? "We" Americans? "We" moderns? "We" humans? "We" sensitive, civilized people?

The handbooks treat this fallacy often as one of improper generalizing, and in conversation sophisticated persons often warn against making broad observations about women and life. All of this is well intended, but it seems to miss the point. It assumes that occurrences of this fallacy are taken to mean all, where their insidiousness lies in their ambiguity in respect to all and some.

The audience can escape from the snare of a speaker who wants them uncritically to supply "all" or "only" by actually supplying these terms in a very critical, conscious way. And speakers can avoid becoming the first victims of their own rhetoric or victimizing others, by asking themselves precisely what they want to say by such a sentence as "Communists are members of the A.S.C." If they do mean only Communists are members, they can say this and get a valid argument. If they mean that seven members of the board of directors are members also of the Communist Party, they can say so. And if they feel that is a very high percentage, they can say that, too. Similarly, in the case of "Children are cruel," one can ask himself whether he means perhaps that children characteristically tend to be cruel in certain situations. If this is what he means, he can specify the situations. Such discussion may not be compressed and neatly aphoristic, but what one says may increase the store of knowledge instead of nonsense.

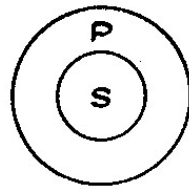
EXAMPLE	COMMENT
Comic books are the literature of the young. And what a literature! They show cruelty disguised as virtue, virtue exposed as foolishness, stupidity and vulgarity enthroned as the normal and sane. They have dug themselves so solidly into the culture of our children that, to succeed, radio and television programs must mimic them in crudity and nervous excitement. Sunday schools have to tell the living story of the Bible in colored pictures wretchedly printed on pulp paper, and in installments...	Let the student translate this bit of rhetoric into perhaps less epigrammatic but more rational prose.

42 False Conversion of Propositions

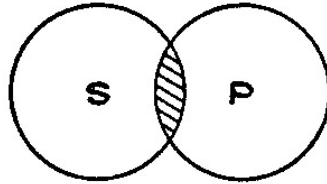
The example about the Communists and the A.S.C., if we may labor it, also illustrates another important fallacy. We remarked above (see #41) that "Only Communists are members of the A.S.C." can be translated into "All members of the A.S.C. are Communists," presumably a false sentence. If it were true, the speaker would certainly have said it, and with emphasis, rather than using the trick of leaving it to his audience to supply the "only." But the point we wish now to make is that frequently unsound syllogisms succeed in escaping detection because the audience is prone to "convert," that is turn around, one of the premises in a way to make tenable its relation to the other premise and, hence, to the conclusion. It is sometimes difficult, in following or advancing an argument, to bear in mind just how true propositions can be validly converted and still make the same assertion. Perhaps some of the time speakers take advantage of the ambiguous English usage discussed in the last section ("Children are cruel") in order to avoid thinking out just how they are entitled to convert some proposition they know to be true, without intending to commit the fallacy of suppressed quantification. In this way they will at least avoid the fallacy of false conversion.

This is the fallacy of getting the turning-about process wrong, so that, though one starts with a true proposition, he ends up with one that does not follow. In a simple case, it is easy to see the kind of mistake one should avoid. Only a very small child, learning that dogs are furry animals, will regard all furry animals as dogs, and say, "Doggie!" when he sees a cat or a

pony. "All dogs are furry animals" converts into "Some furry animals are dogs." All S is P converts to Some P is S, or Only P is S.

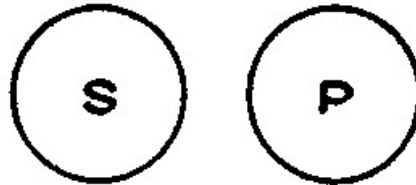


Particular affirmative propositions also have their valid and invalid conversions. These, however, convert directly, as one can see intuitively. Some S is P converts to Some P is S.



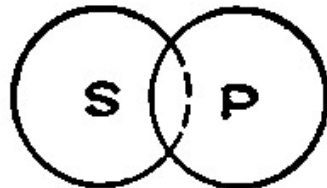
This is as good as we can get with the universal propositions in respect to "some." But notice, one cannot here say "only." "Some great sinners became great saints." With an adjustment of the tenses of the verbs, this converts to "Some of those who became saints had been great sinners," but not (alas!) to "Only those who became saints had been great sinners."

The negative universal propositions also convert directly. No S is P converts to No P is S.



But one is not apt to fail to notice this. "No lips that have touched wine shall ever touch mine," seems perfectly clear no matter whose lips we start with: "No lips of mine..."

The remaining case, the particular negative, is ticklish. "Some students are not interested in politics" does not assert that some people other than students are interested (though, of course, this is true). It does not even assert that anybody else is also not interested in politics, that is, that the class of those not interested in politics has members other than students. Nor does it assert that some students are interested; it is the temptation to make this last supposition that is dangerous here.



The temptation is to fill in the dotted lines. Here the temptation will occur in the simple case (for everybody knows from other sources that some students are in fact interested). In the case of more difficult formulations, one will perhaps be more careful. "Some stars cannot forever maintain their stability. They explode into novae." One would hesitate to convert here and say that some stars can remain stable, for it is easy to see that this statement involves a long-range prediction in a very technical matter, indeed. This kind of proposition also converts directly, but (as the diagram shows), one must be careful of the not, keeping it always with the same term. "Some S is not P converts to "Some Not-P is S." Thus there is a second source of error here. "Some disloyal Americans are not communists." False conversion: "Some communists are not disloyal Americans." This remains to be discovered, if true, from other evidence. It does not follow from the obvious truth of the first proposition. All that follows is that some people other than communists are disloyal Americans.

The fallacy of false conversion consists in making an illicit conversion of any of these four kinds of propositions. Let us gather in one place the permissible conversions:

1. All S is P converts to Some P is S or only P is S
2. Some S is P converts to Some P is S
3. No S is P converts to No P is S
4. Some S is not P converts to Some not-P is S

Even where the resulting proposition is known to be true, the conversion is not allowed. If one does know this, he knows it from some other information, and it is this information which he should codify, so to speak, into his propositions. Otherwise what he says, though true, leads to invalid argument.

It can now be seen how some kind of implicit false conversion lies behind many instances of invalid syllogisms. In a school-boy example of the undistributed middle (see #40) and many similar cases, this is very conspicuous: "All asses have ears. You have ears. Therefore, you are an ass." One would not propose this minor premise to a (humorless) superbrain, for the only plausibility comes from the fact that a false conversion of the major premise is assumed: "Only asses have ears" or "All those with ears are asses" (instead of "Some of those with ears are asses"). And in the instance of the Communists belonging to the A.S.C., the speaker leaves it to his audience to make the false conversion and thus justify the inference.

EXAMPLE	COMMENT
A religious pamphlet claims "As all religious men rely on a power beyond human understanding, so no one who relies on such a power can be wholly devoid of religious feeling."	As in most occurrences of logical fallacies, this example disguises itself by a shift in expression. If the writer had said, ". . . so no man who relies on such a power can be a non-religious man," he would have provided a case of false conversion of a universal affirmative proposition, though still not a simple case of it. "No P is not-S" is a consequence of "All P is S," right enough, but not of "All S is P" ("All religious men rely..."). The actual false conversion is thus a step left out. Persons who indulge in compulsive superstitious practices are probably not "religious men" in the sense intended, though they surely can be said to rely on a power beyond, well beyond, human understanding!
Employee Peter exclaims, "Some bosses just can't take advice. I tried to tell Mr. Henry that the new man isn't worth beans, and now the fellow's lost three old customers in a week. I guess most men who are humble enough to listen to advice just don't become bosses."	Assuming that "are humble enough to listen to advice," means "can take advice," then Peter has falsely converted, unless the last sentence is offered independently of the first. This is quite possible in querulous material, which is notoriously innocent of relevance and coherency.

43 Non Sequitur

False conversion is one kind of non sequitur. Any sentence offered as a consequence of any other is a non sequitur unless, it is j_con-sequence. All invalid arguments, therefore, involve a non sequitur since they at least implicitly assert that the conclusion follows when in fact it does not. As false conversion, the undistributed middle, and the like, can be readily explained on their own grounds, the term "non sequitur" is usually reserved for the widely irrelevant rather than the ordinary invalid conclusions.

In the course of an extended discussion, conclusions are often immediately put to use as premises for further developments. Sometimes these premises are converted, reformulated, corrected, extended. Often it is difficult to judge whether a given sentence is intended as a valid reworking of one of these temporary conclusions or as a new premise which the speaker introduces in the hope that it will be unexceptionable. The ambiguity of usage for such connectives as "so," "therefore," "thus," "hence," contributes to the difficulty, since these terms, taken literally, promise that the sentence to follow will be strictly entailed. But in practice they often serve as mere rhetorical flourishes, smoothing the way and expressing a feeling that what comes after is somehow relevant even if the speaker would not wish to maintain that it is a valid consequence of what has preceded.

It is a hair-splitting pedantry to accuse a speaker of non sequitur when a reasonable recasting of the forms of his language would more clearly express his probable intention and show his argument to be valid. Just as there is no point in supplying for every suppressed premise in an enthymeme some far-fetched proposition that will make the argument invalid, so there is no need to take every "therefore" as a warrant that the sentence which follows in time will also follow in logic. It may express a closely related fact known to be true on other grounds and suitable to serve as a new premise. There are enough veritable non sequiturs in ordinary disputation, exhibiting a real confusion, on which to exercise ingenuity.

EXAMPLE	COMMENT
A lecturer in modern history: "All the skill and discipline of Hitler's mechanized forces went down before the forces of communism and democracy which Der Fuhrer had disparaged and despised. 'Degenerate' democracy grasped control of sea and air; 'inefficient' communism inspired its soldiers with the stubborn resolve that fought on to victory in the rubble of Stalingrad. Thus it was fascism that proved inferior."	The lecturer makes the sort of non sequitur which is most commonly encountered, that is, a conclusion not patently preposterous and yet far from supported by the premises. The tremendous efforts through which the British Empire, USA, USSR and their allies achieved victory in World War II do seem to show that both democracy and communism are capable of producing substantial military results. To say that the inferiority of fascism was thereby demonstrated is to assert a non sequitur, since the factors of relative resources, manpower and space preclude this as the necessary conclusion drawn from the fact of defeat.
A country boy, tiring of small-town life, argues that there is something "courageous and beautiful" about living an "irregular" life in "bohemian" surroundings. "All men who live thus," he exclaims, "have a touch of poetry in their souls. They are not to be judged and censored by ordinary morality." When pressed for his reasons, he says, "Why, many artists live scandalous lives, and we are the richer for it!"	Many is not all. Even if it were, the "all men" sentence would not follow. There are other non sequiturs in this little effusion.
From a scrap-book: "Every reasonable man will want to regulate his life according to moral principles. Yet we all are tempted to make exceptions in our own cases. Therefore, we ought to make allowances for the lapses of others."	A marginal case. The three propositions probably are true in a fairly evident sense, and they are closely related to the same subject. The "therefore" makes them sound like a syllogism instead of a complex observation on life. But what follows "therefore" is no consequence in logic of what precedes. At the very least this is bad writing.
"I know what you are thinking about," said Tweedledum; "but it isn't so, nohow." "Contrariwise," continued Tweedledee, "If it was so, it might be; and if it were so, it would be; but as it isn't, it ain't. That's logic."	Tweedledee's comment is perfectly true - it is indeed logic - but like many other things said to Alice in Looking-glass Land, though miraculously cogent, it is totally irrelevant.

44 *Trouble with Conditionals and Alternatives*

Sometimes one of the premises is expressed in the form of a conditional - "If the parties agree in principle, a compromise is always possible," "If I arrive before the instructor, I am not really late." Conditionals have the form "If a (antecedent), then b (consequent)." Now if, in the second premise, one affirms the antecedent, he may affirm the consequent as a conclusion. This form of argument, called the "modus ponens" in logic, is a perfectly valid and useful kind of inference - "The parties in this case do agree in principle, so a compromise is now possible." "But I see that the instructor is not here yet, so I am not really late, after all."

A second form of valid inference from conditionals results from denying the consequent and then denying the antecedent as a conclusion - "If it has been raining, the streets will be wet. But the streets are not wet. Therefore, it has not been raining."

If the conditional is true in general, that is, if the antecedent gives a sufficient condition for the consequent, then when the antecedent is true in this particular case, the consequent must be true also. And when the consequent is not in this particular case true, then the antecedent could not be true. If it is true that every time it rains the streets are wet, then if it rains now, the streets must be in fact wet. And if it is false that the streets are now in fact wet, then it can not have been raining.

There are two common mistakes in using this form of argument, corresponding to the two valid forms. The valid forms can be summarized as affirming the antecedent, or denying the consequent. The invalid forms are called traditionally "denying the antecedent" and "affirming the consequent." The mistake seems to consist of treating the conditionals as expressing, not only sufficient, but also necessary conditions. Suppose I can affirm that if and only if it rains the streets are wet. I can now affirm, when it has not been raining, that the streets will not be wet. Or, in the case when the streets are wet, I can affirm that it has been raining. But the conditional in the if-and-only-if interpretation is false: as a general principle, rain is not a necessary condition for the wetting of streets - the water-wagon may have washed them down. Clearly, in view of this possibility, from the mere fact that the streets are wet, I cannot affirm that it has been raining. Rain is a sufficient condition for wet streets, but not a necessary condition. This being the case, nothing follows from "denying the antecedent" or "affirming the consequent."

Alternatives also frequently serve as premises in argument. The speaker affirms that a or b; then he affirms that not-a, and in a conclusion that, therefore, b. When any sentence is substituted for the letters, if the alternative is true, then by denying one of the sentences, the speaker obtains a valid inference to the other. "The chairman is sick, or he would surely be here. But he is not here, so he must be sick." Or, with the same alternative, "I know he is not sick, so he must be around here somewhere."

The improper use of the alternative corresponds to that of the conditional. The speaker supposes that the alternative divides the universe of discourse so that nothing is left over: a or b is equivalent to a or not-a. This kind of total division which leaves nothing over is called a "disjunction." Sometimes it is possible to substitute sentences for the letters so that a disjunction results: "It is either raining or it is not raining." "Isn't a student either present or absent?" Unless the alternative is a proper disjunction, it is a fallacy to suppose that the affirmation of one sentence entails the denial of the other. "He is sick, or he will come. But he will come; therefore, he is not sick." He may, of course, come even if he is sick. Like the other logical fallacies, arguments based on affirming the consequent or denying the antecedent, or on affirming one of the two sentences in an alternative, are often disguised by a shift of expression. Moreover, in common speech there is the ambiguity of "if," which may mean simply "if" or may mean "if and only if." Likewise, "or" may mean "either one or the other but not both," or it may mean "possibly both, but certainly one or the other." In the course of a long argument, speakers often busy themselves producing lengthy evidence that one of the sentences in an alternative is true on the assumption that this disproves the other, or alleging evidence against the antecedent of a conditional, as if this disproves the consequent.

EXAMPLE	COMMENT
A political commentator writes, "If the farmers will organize, they have a good chance of keeping the price supports. But who ever heard of farmers really getting together on anything? They are by occupation and conviction individualists to the core."	This is an enthymeme, and the readers are invited to supply the missing proposition, in this case the conclusion: "Therefore, the farmers do not have a good chance of keeping price supports," an invalid inference. The Administration may hope to retain the farm vote by keeping the supports, even if the farmers do not organize to fight their political battles. This is an instance of the fallacy of denying the antecedent.
Peter argues with the reader, "If I don't get B in this course, there is no justice in this world." Later on, surprised at getting a B, he reminds the reader of what he had said and exclaims, "So there is justice in this world, after all!"	It probably was not a logic course. This is another instance of denying the antecedent. Since the antecedent is negative, the denial of it consists in negating a negative: "I did not not-get-B in the course," or, canceling, "I got B in the course." The denial of the negative consequent operates similarly. But the denial of the consequent does not follow. Translating into an alternative, we have, "I get B in the course, or there is no justice. But I get B." Therefore? These alternatives are not proper disjunctives; one might, for instance, get his B because of favoritism, a form of injustice in the world.
Heard on a broadcast sermon: "If a man is self-seeking in all the important crises of life, his life as a whole will become a permanent crisis of lonesomeness, bitterness and futility. No true saint is ever lonesome, even in the desert. Nor is he bitter in disappointment. He may be despised and even persecuted and all his works destroyed, but no one could call such a life a life of futility. The saint, if only by his shining example, is the most dedicated to the service of his fellow man of all the noble classes of human beings. Thus the saint can never be self-seeking, even if he retires from the world to devote himself exclusively to seeking himself, in the sense of seeking his personal salvation."	Here is a typically complicated argument, exploiting all sorts of ambiguities and rhetorical flourishes, operating on complex and vaguely delimited categories (self-seeking, futility), which allow for paradoxical contrasts (not self-seeking though seeking only himself), and a multiplicity of terms, all lumped together. Yet the skeleton of the argument remains clearer than is often the case in practice. "If a, then b; but not-b, thus not-a" - a valid inference.
Mrs. Peter complains to her neighbor, "When it rains, it pours. This must be my rainy season, as everything is happening to me at once. Just let me tell you..."	When has the force of if. The conclusion is given vaguely, "This must be my rainy season," but it still does not follow from affirming the consequent. Other things might cause "it" to "pour" besides the metaphorical rain.

A newspaper editorializes: "The candidate is a fool or a knave. We know that he is not very bright. He played footsie with left-wing groups one day only to turn around the next and make anti-communist speeches. I guess we exonerate him from knavery - while noting that a well-intended dupe often does more damage than a dyed-in-the-wool villain."	Again much freedom with language, yet, again, the form of the argument is clearer than is usual in such writing: "a or b; but a, therefore not-b." Invalid. It seems highly likely that many communists, if that is what is meant, are both fools and knaves. Perhaps all of them are, in some sense of these vague terms.
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Logicians customarily treat fallacies that take advantage of the imprecisions of language as part of formal fallacies. Ambiguities, doubleness in syntax, and the like, can technically be regarded as instances of what used to be called "the four terms." This is a reference to the rule (see #40) that syllogisms cannot be validly constructed with more than three terms. Clearly, where a word is used in two several senses, there only *appear* to be three terms, and fallacy results just as surely as if a separate term had been frankly introduced. The following fallacies we treat rather loosely as a group of technical vices or devices that exploit the vagueness of ordinary language.

In the ordinary language a relatively small number of structures must cover a multiplicity of functions. Webster's *Collegiate* says that the preposition *in* is used to show the relationship of containment ("Peter is in the breakfast room."), of part to a whole ("Peter is the dullest boy in his class."), of condition or circumstance ("Peter is in business." "His house is in escrow - it is also in ruins!"), of certain limitations ("Peter argues only in anger - or in circles."), as well as relationships of many other sorts. It is also used in idioms: "in as much as," "in fact," "in particular." Can any two persons be certain that they understand the following sentences in the same sense as to the force of the prepositions (to say nothing of the vagueness of the other terms)?

In the architectural structure, man's pride, man's triumph over gravitation, man's will to power, assume a visible form. Architecture is a sort of oratory of power by means of forms,

—Nietzsche

The process by which language handles different material contexts with the same linguistic forms is called "equalization." Forms logically distinct are equalized. The most notorious fallacies resulting from equalization are the fallacy of ambiguous terms and that of amphibole. Other fallacies that involve a play on vagueness or general ambiguity are those of accent, punctuation, and the like.

45 Ambiguous Terms

As a result of historical development, many words have a large range of meanings. This renders them ambiguous and leads to confusion in argument when such words occur as terms. To show the bare forms of proof and thus escape the ambiguity of language, modern logic dispenses in large part with ordinary vocabularies and reveals the structure of the various relationships in propositions by means of a notation of arbitrary symbols ($a \cup v a$; $a \cdot b \supset b \cdot a$). Most discussion cannot afford to be so abstract as this and must deal with political or social or every-day situations and so employs the rich and ambiguous vocabularies of the natural languages.

What helps control the ambiguity of language? The context will often determine with fair precision in which of its equivocal senses a word is being employed. Puns and homonyms ("raze" and "raise") are not apt to confuse an argument since the very extent of difference in their meanings ordinarily prevents one use from being mistaken for another. The shift in meaning of a single word around a common core is a more usual source of misunderstanding. Here, too, an explicit context is generally successful in defining by use, as it were, the sense intended. To take an instance, the word "speech" is no more ambiguous than many, yet it applies to several situations: "The Provencal speech [dialect, tongue] became a highly developed literary language." "Cicero's First Catiline is a model political speech [oration]." "The actor Garrick learned the brilliant new twenty-line speech [a part of the spoken role] in five minutes between acts." In the contexts the various senses of "speech" become perfectly distinct and give rise to no confusion. A second method of controlling the range is actual definition: "In this treatise we shall use 'speech' to stand for any sounds produced by the human larynx for the purpose of communication." All the kinds of ambiguity important to distinguish for argumentation occur where neither the context nor definition confines the area of meaning to one particular sense of a word.

In the first kind the actual object intended is left unspecified. This sort of ambiguity is trivial, since cross examination could always determine which object the speaker referred to. If in court a witness speaks ambiguously of "the evening I saw Jones," he is frequently required to specify his reference more accurately, "Do you mean the First of April?" Oracles are celebrated instances of this sort of ambiguity, though it is not easy to see how anyone could have been deceived by them.

EXAMPLE
Croesus, King of Lydia, planned to attack Persia. A prudent man, he first enquired of the Delphic Oracle whether Fortune would favor his enterprise. The Oracle declared, "Croesus, having crossed the river Halys, will destroy a great kingdom." Heartened by this, Croesus crossed the Halys, which separated his kingdom from Persia, and was utterly routed by Cyrus. Croesus, bereft of his kingdom, dispatched a messenger to the Oracle to complain of deceit. The Oracle characteristically retorted that the prophecy was correct, for a great kingdom had indeed been destroyed - the kingdom of Croesus.

The second kind of ambiguity is also essentially trivial. It takes advantage of equivocal senses of a word or phrase to make a play on them. In the following example a play is made on the two distinct senses for the phrase "lose no time": "waste no time," "not delay." Thus this is really a pun.

EXAMPLE	COMMENT
Reader Peter is talking to a freshman who comes to his office. "When you turn in your term paper, I shall lose no time in reading it."	The student might well reply, "Then I shall lose no time in writing it."

The third variety has it in common with the second that it hovers between two distinct senses of a word, but the intention may not be a play on them. Sometimes this is by no means funny, as when it is the device of the loop-hole: the language of diplomacy and political concealment. A relatively innocent case is Calvin Coolidge's laconic announcement after two terms in office, "I do not choose to run." Neither newspapermen at the time nor historians since have succeeded in deciphering it. What did the President mean?

"I do not choose (intend) to run." - and I shall do as I intend.

"I do not choose (desire) to run." - though duty may require it.

The final variety we shall distinguish has the traditional name "ambiguous terms." The argument shifts from one sense to another of a term, and what is shown earlier to apply to one sense is later on, often unconsciously, applied to another, simply because the same word commonly covers both. It is this variety that gives rise in argument to the demand "define your terms."

EXAMPLE	COMMENT
Peter remarks to a friend, "It doesn't make any difference whether you win or lose a war. War, as I look at it, is a game which everyone loses."	In this abbreviated example, the shift occurs in two sentences. The words "win" and "lose" in the first sentence seem to refer to military victory and defeat, in the second sentence to the broad advantages of peace over war. It is probably true that nations engaged in modern war must lose in the sense of suffering human and material loss exceeding any advantages secured. But wars are indeed still "won" or "lost" in the sense of the victor forcing his will upon the defeated. There is a world of difference between winning and losing a war in this latter sense. Peter, it seems, is understandably disappointed with war as a human institution, and his strong feelings account for his being beguiled by this ambiguity.
A wife in recriminations against her spouse begins by accusing him of "neglecting" chores: taking out the rubbish, tending the yard, walking the dog. After a few minutes she says fiercely, "You neglect everything. You neglect me shamefully. You neglect your own children."	The first charge uses the term "neglect" in the sense of negligence in taking care of concrete duties. It will be seen that as the woman's feeling begins to mount, she shifts to a more general sense of "neglect." The berated husband is now in a bad way. Whatever he might have to confess concerning the rubbish and dog-walking, what can he say to the terrible accusation of "neglecting" wife and children? If the discussion had been kept orderly, there is at least a chance that the good wife would have seen where she was going in time to keep her sense of proportion. Whether or not she convinced her husband that he was a scoundrel, it seems likely that before she fell silent she convinced herself. And the children, too, if they overheard.

A famous philosopher argues that since the meaning of "Peter" is the identical man we knew before, see now, and will recognize tomorrow, the meaning of anything at all is its identity. Moreover, since the meaning of anything to an organism is precisely the value that that something has for the organism, this identical recurrence means the value the something has. Thus all value depends on identity. For this reason, pluralistic accounts of the world, as they stress discreteness and change instead of the unity, the identity, of experience, destroy value and are meaningless.	If you do not understand this bit of philosophizing, do not worry: it is unintelligible. It is put in here to illustrate how in actual argument the shift between ambiguous senses of a term often is by insensible degrees, so that it is very hard at times to see that what had been demonstrated by means of the use of one sense is now being applied to something quite different. Characteristically, this philosophical argument originally appeared in an elaborate context, full of illustration, allusion, incidental demonstration. This sort of spell weaving takes time; for that reason no brief examples can seem as plausible as the device often is in fact. Truncated, the shift is too obvious to succeed.
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C. K. Ogden and I. A. Richards, from whom the example is borrowed, wrote a famous book, *The Meaning of Meaning*, to show that such shiftings about among the accommodating uses of "meaning," even in philosophy, where one would expect some care, vitiate many a discussion. Incidentally, Ogden and Richards complete the argument above in an amusing way. If the identical recurrence of anything is the meaning of it, and if the meaning of anything is its value, the sentence above, "identical occurrence means the value," by canceling gives "Meaning means meaning." The authors suggest that this sentence loses in force what it gains in clarity. For another philosophical example exploiting the ambiguity of meaning and the rhetorical force of *mean*, see #50.

46 Amphibole: "double talk"

This also is a pet device of oracles. Amphibole takes the advantage of the equalization of syntax, that is, of logical ambiguity in sentence structure. In Latin there is often doubt as to which of two accusatives is the subject and which the object of an infinitive. This gave a head start to the oracles. "Aio te, Aecida, Romanos vincere posse," means that you can conquer the Romans - or vice versa. In Shakespeare (2 Henry VI, I, i, 33-34) there is a famous instance;

*The Duke yet lives that Henry shall depose
But him outlive and die a violent death.*

No telling whether this means that the Duke is still alive whom Henry shall depose, or who shall depose Henry. The first line turns on the ambiguity of "that," which can stand indifferently for "who" or "whom," and there is a faulty pronoun reference in the second line, "him." This oracle could be regarded as an instance of verbal ambiguity rather than amphibole, which is ambiguity of syntax - of course pronouns are structure-words, and very different from sense-words, such as nouns and adjectives.

47 Ambiguous Accent

The example in #45 about Reader John would be less ambiguous - and more offensive - if Reader John had accented I: "I shall lose no time in reading your paper!" In a way this would imply that, whoever may lose time, I shall not. Accent, capable of selecting the intended sense amongst various possibilities, is also available for distorting another's intended sense. A malicious person finds endless opportunities for giving false impressions, while staying within the literal truth, by subtle shifts of accent in reporting the words of others. If Mary says, "I didn't think to invite him," this becomes, "Mary said - her very words - 'I didn't think to invite him!'" with scornful inflection on the last word, or, perhaps it becomes, "She said, 'I didn't think to invite him,'" with the suggestion that the invitation was the fault of another. Even the most obvious and innocent generalizations can become invidious when the speaker cleverly stresses them in a special way. A famous philosopher, who liked to pose as a misogynist, once began an address to a woman's club: "Man is a rational animal."

EXAMPLE
Consider how an actor, reading Mark Antony's funeral oration, can vary his inflection to change "But Brutus is an honorable man" from apparent sincerity to open sarcasm.
Take some simple sentence such as, "He will come" and accent each word in turn. Note the different contexts implied by each accent.

48 Ambiguous Punctuation and Word Order

The order of modifiers and the placing of punctuation marks can considerably affect the sense of what is said. Everyone is familiar with boners of this sort: "Lost, a fountain-pen by a student half-full of ink," "For sale, Chow dog, eats anything, very fond of children," "See revival of Fred Astaire in Top Hat and selected shorts!" These childish jokes illustrate the need for

proper disposition of modifying elements in a sentence. They do not prepare for subtle uses of the possibilities of ambiguous punctuation and word order.

Many poets characteristically exploit these possibilities. If, for example, a phrase stands ambiguously between two components, this is a fair sign that the poet intends it to go with both, not to alternate between one or the other, and from this two-way reading expects to get an economy and enrichment. The critic-poet William Empson adduces many examples. In the Seven Types of Ambiguity he shows that a part of the effectiveness of poetry depends on this. One instance must suffice. Quoting Macbeth:

*If it were done, when 'tis done, then 'twere well
It were done quickly;*

Empson points out that this is "double syntax" since the line end imposes its stop and yet what follows completes the sentence. It is certainly better to do murder quickly, and it is certainly true that no deed of Macbeth's sort is really over with ("done") when it is committed ("done"). Informed readers want the interpretation to *include* both thoughts.

We are not always reading poetry. In argument, we shall want as little of this sort of doubleness as of any other. The importance of watching these elements of punctuation and order is very apparent to legal writers, where care with "and/or" constructions, commas, and all the punctilious details of composition is often carried to what may seem to the layman absurd lengths. Yet cases have turned on carelessness with a single comma in contracts or wills. And issues have often been confused, outside the courtroom, because of divergent interpretations permitted by misplaced modifiers or haphazard punctuation.

EXAMPLE	COMMENT
Peter's will provides, "My son Peter, Jr. shall receive \$5,000 per year until he has completed his military service, when he shall receive \$10,000 per year and the use of my estate Blackacre, if he is married." Peter, Jr., still a bachelor, completes his military service.	Peter, Jr. will do well to see his lawyer. Does the restrictive clause "if he is married" refer only to the immediate antecedent, Blackacre, or does it refer both to Blackacre and to the receipt of the \$10,000 per year? Since the restrictive clause is set off by a comma, a grammarian would apply it to both Blackacre and the \$10,000 per year. Courts will not press rules of punctuation to defeat the intent of the parties where the intent is apparent. But what did the deceased Peter intend? Maybe it will take a lawsuit to determine.

49 Circular Definitions and Question Begging

One way to eliminate vagueness and to make sure that abstractions adequately represent constructions is to define the terms carefully. Clear definitions may not solve all difficulties (see #11). Be this as it may, bad definitions multiply them. The most notorious fault with definition is circularity, although formal definitions are circular in the sense that the defining term and the term to be defined are interchangeable. By "circular definition" is meant a definition which attempts to resolve a point at issue by defining a term so as to preempt the point. Such a definition "begs the question." Suppose someone is arguing that responsibility cannot be expected of children. His opponent argues, " 'Responsibility' means the ability to distinguish between right and wrong." Then he adds, "Children of six can distinguish between what's right and what's wrong. They are therefore responsible." The answer is correct. "Responsibility" can be defined in this way, and small children can tell you what is right and wrong. The conclusion follows. Far from winning the argument, however, the statement merely leaves the disputants in need of a word to cover what was originally intended by "responsibility."

EXAMPLE	COMMENT
A defense attorney addresses the jury: "These fraudulent charges, long since proved false and unfounded..." The judge interrupts to instruct him that whether or not the charges are false and fraudulent is just what the jury is impaneled to determine. Counsel retorts, " 'False' means 'without basis in fact' and 'fraudulent' means 'deceitful.' That is what our side is contending. All I am doing is stating our contention. Are we not to be allowed to answer the charge?"	The attorney's speech begs the question before the court, and his circular definition begs the question as to whether he is to be allowed to beg the question.

Sextus Empiricus has an argument for the existence of the gods. He points out that "you do not serve the centaurs, because the centaurs are non-existent." But you do serve the gods. So the gods certainly exist, or else "you could not serve them."	This argument is an enthymeme, but the suppressed elements are suggested by the remark about the centaurs. Let us spell out the whole thing. "If something is non-existent, you cannot serve it. The centaurs are non-existent. Therefore, you cannot serve them. If you can serve something, that something must exist. But you can and do serve the gods. Therefore, the gods exist." Now it is true that there are no centaurs around to be served; moreover, people do not in fact serve them. But how about the first premise "If something is non-existent, you cannot serve it"? From this it follows that "If you can serve something, that something must exist," but this is precisely what Sextus Empiricus ought to be proving. Thus, when we supply for him the premise that will make his argument valid and plausible, we assume the very thing that he wants to prove. The argument is circular. Moreover, as the case of the worship of pagan gods shows, the suppressed premise on which it rests is false. If I should start a new worship tomorrow and establish a ritual to serve Glug-Glug, would this cause Glug-Glug to exist?
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Circular definitions are a rather obvious instance of question begging. In its full-blown maturity question begging can go on for volumes, even through whole systems of thought. As can be guessed, the mature fallacy is not easy to handle. There it is, big as the universe (in Hegel, for example), but just how it operates is hard to show in a simple instance. There are some formulas that rouse suspicion in the experienced, such as "It is obvious," "No one can deny" (see #21), and a whiff of vagueness is sufficient to put an old hunter on the scent (see #10). Yet the beast is often elusive: if trapped by an exception, he can be rescued by a distinction.

EXAMPLE	COMMENT
Everything in the world is known through experience. An inexperienced fact is inconceivable. There is, then, a constant equation between fact and experience. Philosophical idealism declares that the world is caused by experience. What evidence is there for anything else? Does not evidence itself involve experience? Now experience obviously requires an experiencing intelligence. Idealism draws the evident conclusion: the universe is mental. Without mind there is nothing.	<p>Notice the vagueness of "fact," "experience," "mental." In this (very truncated) statement of the idealist position, it seems unlikely that by "mental," for instance, can be meant what is commonly meant by that term. And notice "evident" and "obviously." That the universe is mental is a far from evident conclusion, and it is far from obvious that without mind there is nothing, since this is what the argument is designed to prove. Ralph Barton Perry showed that this argument for Idealism rests on the truth that whatever is likely to be meant by "experience," it will attend all knowledge. Perry argued that this kind of constant attendance does not prove a causal relation. Everything that happens in the world is attended by configurations of the stars and planets, what astrologers call the "chart." And this chart is constantly changing. But it certainly does not follow that these changes in the sky cause events they attend in the lives of men. To suppose so is superstition: astrology.</p> <p>It might be added that the term "experience" is so inclusive that it incorporates "knowledge" and even "fact." When such terms occur in argument, there is open invitation to circularity. The circularity here is something like the following:</p> <p>Experience attends everything, and it is mental; the universe is everything; so experience causes the universe; therefore, the universe is mental. Needless to say, idealists would reject such a crude statement of their position. This is what makes exposure of question-begging so difficult.</p>

In a picture by the famous French comedian Sacha Guitry some thieves are arguing over division of seven pearls worth a king's ransom. One of them hands two to the man on his right, then two to the man on his left. "I," he says, "will keep three." The man on his right says, "How come you keep three?" "Because I am the leader." "Oh. But how come you are the leader?" "Because I have more pearls."	This apparently satisfies the two thieves. Even this simple-minded example takes several lines to explain, and it is apparent that instances of question begging designed for more than amusement consume time and space. This is especially so, since they almost never occur in pure isolation, but come interlaced with the pearls of shimmering vagueness linked together with false generalizations and the golden chains of Word Magic (see #12).
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50 Misuse of Etymology

If context and definition are desirable ways to control the range of senses of ambiguous words (see #45), it does not follow that all ways which attempt to control the range lead to happy results. Some, indeed, lead to further confusion. Speakers have been known to insist on insisting that "education" comes from "educere," a Latin word meaning to draw out. From this etymology they argue that education should be a matter of drawing out the student in the sense of coaxing rather than compelling. Maybe it should, but aside from the fact that the word comes from "educate" meaning "to educate," the derivation remains irrelevant to the argument. This fallacy is a form of circularity (see #49), since the audience is asked to subscribe to the conclusion because of the very meaning of some terms used in the premises. But simple circularity is hardly apt to deceive, whereas the assumption that words should stick close to etymological sense is a limit on the conventional meaning of words and an unwarranted restriction on the growth of language.

EXAMPLE	COMMENT
Richard Whately cites the argument that since "Representative" means one elected to represent a constituency, why then, the elected Representative should seek the advice of his electors and vote the way they tell him. This argument, Whately rightly points out, is contrary to custom, constitutional practice, and good sense. A representative is responsible to his electors, who may throw him out of office if he fails to represent their ultimate interest, but he is expected in the meanwhile to make a professional study of issues that arise in the legislature and to vote on them according to his conscience.	
Mystic Peter writes in <i>The Obscurantists Quarterly</i> : "The great physicists, like Newton and Einstein, reduce the vast concepts of Force and Energy to mathematical symbols, but we must never forget that these same words stand for the eternal Power of Life and Spirit that we may use and control in our own thinking."	A little more control in Mystic Peter's thinking and there would be no need for comment here. The words "force" and "energy" occur in physics, but there they are given precise meanings which forever separate them from the vague anthropomorphic associations which Peter is attempting to play on. The sentence is false. Whatever Peter is likely to mean by "the eternal power of life and spirit," etc., the words as used by the physicists do not mean that.

<p>Josef Pieper, a contemporary metaphysical philosopher, attempts to show that, not only is leisure of present importance to the spiritual development of Western culture, but that even in the earliest period it was the foundation of it. "That much, at least," he says, "can be learnt from the first chapter of Aristotle's <i>Metaphysics</i>." He goes on, "And even the history of the word attests the fact: for leisure in Greek is <i>skole</i>, and in Latin <i>scola</i>, the English 'school.' The word used to designate the place where we educate and teach is derived from the word which means 'leisure.' 'School' does not, properly speaking, mean school, but leisure." (Josef Pieper, <i>Leisure, the Basis of Culture</i>, trans. Alexander Dru, with an introduction by T. S. Eliot, Pantheon Books Inc., New York, pp. 25-26).</p>	<p>One learns something from the first chapter of Aristotle's <i>Metaphysics</i> or any other place in any other book of argument, only if the author's arguments are valid and his premises true. Otherwise, see #15. If Mr. Pieper had been content, in his use of etymology, to limit himself to his statement that the "history of the word attests the fact," leisure in its relation to schooling would have constituted supporting evidence of a sort. But he was not content with this. The last sentence is something of a wonder. If "school" does not mean school, how can "leisure" mean leisure or "Pieper" mean Pieper or any word mean anything? "Properly speaking," indeed, clearly does not mean properly speaking. A translation: The English word for school derives from a Latin word for leisure. But this has already been said. Presumably Mr. Pieper is not advising his readers to begin using the word "school" to stand for leisure, but wishes them to remember that the etymology of "school" shows an early understanding of the connection between leisure and education. Thus the use of "mean" in the last sentence is rhetorical, a matter of emphasis, but is concealed in the notorious ambiguity of that term. It is true that Pieper does not use the term in giving the etymologies. If he had written, "Skole meant leisure in Greek," etc., the shift would be very evident. For another example relying on the ambiguity of "mean" see #45.</p>
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51 Idiosyncratic Language

There is another common practice which is almost directly opposed to the false kind of control of meaning represented by the fallacy of etymology. This is the sort of paradoxical talk that attempts to sound profound: "The seeming real is the only illusion." It consists in a sort of personal or private charging of words with meanings different from, and sometimes opposite to, the usual range of the words in their conventional contexts. The present time seems peculiarly susceptible to this sort of perversion of the language. Orwell brilliantly characterized the phenomenon in his 1984 ("War is Peace").

It seems particularly hard to describe just what takes place in the cases we have collected. New ideologies - religious, political, philosophical - arise today in a ferment. It is not surprising that language evolved for the needs of past generations is inadequate to express all the new concepts that people wish to talk about. They must stretch old words to radically new meanings or invent barbarous neologisms. They do both, of course, and sometimes with unhappy results. The situation favors some persons and groups who deliberately exploit linguistic confusion. Errors in judgment are described as "treason," conservative statesmen called "fascists," capitalists called "bourgeois imperialistic beasts." Such perversion of language also goes hand in hand with a cynical employment of the emotive power of words (see #13).

EXAMPLE

The "National Museum" - a private enterprise on the site of the Battle of Bull Run.

The "National Socialist rule of law" - a denial of an independent judiciary, equality before the law, certainty of law, *habeas corpus* and other procedural safeguards: in short, a rejection of everything traditionally associated with the term "rule of law."

A "People's Democracy" - a monolithic totalitarian system suppressing free expression of the popular will in control of government.

CONCLUSION: OVERSIMPLIFICATION

For a conclusion there is one last fallacy - oversimplification. In #3 the example contained the statement, "Increased armaments appear as one of the major causes of European wars." Robert Thouless calls this sort of thesis "tabloid thinking," and analyses it as reducing a complex situation to a simple statement which is inaccurate. False generalizations are often a result of crudely simplifying concepts, but oversimplification is a fault of the explanation. The situation reveals a beautiful complexity, but for purposes of explanation to the uninformed - a fifteen minute radio talk on quantum physics for the layman - it has to be caught up into a vague phrase or two and often tied in with something utterly different or analogous only in a crude way. "Freud teaches that everything is sex." "The atom is a little solar system." "Virgil's Aeneid is just a long patriotic hymn to Augustan Rome."

The error is difficult to avoid. In the first place, time generally makes it impractical to elaborate all qualifications. Moreover, in many discussions full exposition of detail would obscure the subject rather than clarify it. For example, textbook writers habitually wrestle with the dilemma of whether to make statements which are, though not wholly accurate, yet clear and serviceable enough for students, or whether to incorporate all the qualifications necessary for accuracy - and drown the student in details. The problem here is to achieve simplification without oversimplification.

In the second place, when the speaker does not possess a detailed knowledge, the very lack of familiarity with the complexity of the subject is apt to increase his confidence in what are his mere "tabloid" thoughts about it. A superficial knowledge may make a complicated situation appear quite simple, like a wide patch of brambles seen from the air. And everybody has to be content with a superficial acquaintance with most subjects. Finally, even where we are well aware of the existence of complexities, we may be tempted, in "the human quest for certainty," as John Dewey argues, to try to cut through them and to set up an oversimplified system with everything tidy and neat.

So, we see, oversimplification produces a sort of false clarity which misrepresents the real nature of the problem. As authors of this book, we hope that our descriptions of common fallacies have not often fallen short of a proper balance between directness and accuracy in explanation. And we are sorry for any statements which make the error of oversimplification.

This book began by quoting a cynical sentence or two from Schopenhauer. The authors should like to end it by quoting a sentiment which seems to come from another world, the world of John Henry Cardinal Newman. On defining a gentleman, Newman says, "He is never mean or little in his disputes, never takes unfair advantage, never mistakes personalities or sharp sayings for arguments, or insinuates evil which he dare not say out." This noble disputant, Newman continues, acts towards an enemy as if he were one day to be a friend.

He has too much good sense to be affronted at insults, he is too well employed to remember injuries, and too indolent to bear malice. ... If he engages in controversy of any kind, his disciplined intellect preserves him from the blundering discourtesy or better, perhaps, but less educated minds; who, like blunt weapons, tear and hack instead of cutting clean, who mistake the point in argument, waste their strength on trifles, misconceive their adversary, and leave the question more involved than they find it.

—Cardinal Newman

It is the "blundering discourtesy" of minds that leads to *oversimplification*. And Newman is right; it is a paradox of bluntness and dullness that they leave the question more involved than it was to start with. Only the clear-thinking and well-informed mind can cut through complexity and achieve something of the true simplicity that mathematicians call elegance.

APPENDIX

SOME LOGICAL PARADOXES

This discussion is appended for those who might have an interest in modern logic. It is not generally known that some of the apparent paradoxes of material implication also occur in the ordinary language, where they are used for special effects.

The logical relations between sentences hold even when the sentences are relevant to one another only in the largest sense, their truth values. Thus the usual interpretations in logic of the terms "or," "if," and the like, has no regard for the content of the sentences related by them, but considers only whether or not the sentences are true. Persons untrained in logic find some of the examples used by logicians very paradoxical: "Today is Tuesday, or Truman is President. But Truman is not President, so today is Tuesday." This is a perfectly valid inference, and every Tuesday since the inauguration of Eisenhower, it has yielded a true conclusion. The mutual irrelevancy of the two sentences leads to a feeling that it is not very good reasoning to decide the day of the week on the grounds that somebody is not President.

The logician is not interested in the grounds of belief in so far as they involve content other than truth value. His grounds for affirming or denying a conclusion are the relations obtaining among true or false sentences when they are combined according to exactly determined operations. An even more striking instance of this attitude results from what is called "material implication." This is a rule of interpretation which takes every complex sentence of the form "if a, then b" to be syntactically equivalent to any compound sentence of the form "not-a, or b." It is evident that in all cases in common speech, in fact in all cases whatever, where the conditional is true, the corresponding alternative is also true. "If it rains, the streets are wet" has the same truth value as "It does not rain, or the streets are wet."

Rule: If a, then b is equivalent to Not a, or b.

Yet one feels that a compound sentence expresses a weaker relationship than a complex sentence. In this case they have the same truth values, of course, but in an accidental sort of way. The conditional seems to show a relationship, to *express* a tighter, more essential connection between the two facts. And when one considers some of the consequences of the equivalence that Bertrand Russell and other logicians have explored, one finds them shocking to common sense. A few examples will illustrate this feeling of paradox.

An equivalence, of course, works both ways. Not a, or b is equivalent to If a, then b; "Red is not a primary color, or the earth revolves around the sun." The first sentence is false, the second true, and thus the compound sentence, as a whole, is true. This is already bad enough, though we are familiar with this use of "or," to show that one side or the other must be true. But when we translate into the conditional, according to the rule, we get "If red is a primary color, then the earth revolves around the sun." This seems to suggest that a truth about colors is grounds for the astronomical truth. But the point here is that *any* true sentence can be the consequence of *any* other true sentence, in this interpretation.

Suppose we put a true sentence on each side of the alternative. "Arsenic disagrees with me, or the moon is a heavenly body." We are also familiar with the use of "or" which allows both sides to be true: "I'll phone or drop in to see you" remains true if I do both, though, of course, I must do one or the other. Now the arsenic-and-moon example translates to "If arsenic agrees with me, then the moon is a heavenly body." (Note: "not disagrees" equals "agrees.") As this case is entirely representative, we can say that any false sentence implies any true sentence. Yet a known false sentence is strange grounds for believing a true sentence, even one surely known to be true.

So far we have seen that any sentence, true or false, is "grounds" for affirming any true sentence. What of false sentences? We already know that any false sentence implies any true sentence. It now develops that any false sentence also implies any other false sentence. To take an example, "If Carroll is a figment of the Red King's dream, then Brooklyn is the capital of Ethiopia." This is equivalent by the rule to "Carroll is not a figment of the Red King's dream, or Brooklyn is the capital of Ethiopia," perfectly true, since the first member is true.

These paradoxical results of the material interpretation of If a, then b as Not a, or b are often summarized as follows: a true sentence is implied by any sentence, true or false; a false sentence implies any sentence, true or false.

The feeling of "paradox" arises from two facts of common usage. The first has already been mentioned, that language characteristically employs conditionals to express general principles. This is to say that the conditionals are themselves general principles or are particular applications of them. Take the case "If $7 = 3 + 2$, then $7 = 2 + 3$." Not bad; though the hypothesis is false, the conditional does express a general principle about the meaning of "=" and "+". Apparently we don't mind reasoning on false hypotheses when a condition of relevance is preserved, that the conditional express a general principle: "If Hoover is the uncle of Washington, then Hoover is a man" is a fanciful but clear illustration of the general principle "If x is the uncle of y, then x is a man." Now if one should say, "If $7 = 3 + 2$, then daffodils bloom in the fall," this condition of relevance is lacking. There is no general principle expressed here; that is, the sentence is itself no general principle about the meaning of relations like "=", nor is it a special application, like the uncle sentence, of some principle, say, about the meaning of "7" or "daffodils," or the like. The conditional is true but vacuous. Our feeling is as if, turning from the street, we opened the front door of a house and stepped through into a vacant lot. We've "entered," all right, but we have got nowhere - like a Hollywood set.

The second fact of usage is that ordinarily we don't start with sentences already ear-marked "true" or "false." When we use conditionals, we are trying to give our grounds for affirming that some proposition is true or false. Yet there are occasions when ordinary people speak rather like logicians. These are the cases when people want to demonstrate their conviction of the certain truth of a proposition. This works very well for alternatives: "Today is Tuesday, by heaven, or my name is mud!" "I paid you back that five dollars, or I'll eat my hat." Something similar also occurs in conditionals - we have seen how alternatives can always be translated into conditionals. "If today is not Tuesday, my name is mud!" Falstaff is very fond of this form of asseveration. "If manhood, good manhood, be not forgot upon the face of the earth, then am I a shorten herring." "An [if] I have not forgotten what the inside of a church is made of, I am a pepper-com." "If I be not ashamed of my soldiers, I am a soused gurnet."

Falstaff's semi-oaths are a reminder that these paradoxical uses are perfectly valid. When the conditionals are true, a true conclusion can be derived from them. Since arguments based on the material interpretation are valid, it is a fallacy to reject these arguments as invalid, no matter what feeling of paradox they arouse. The exploration of the forms of valid inference based on the nature of logical operations is a proper study of logic. We must conclude our discussion with a few examples of misunderstandings of the nature of the logical enterprise.

EXAMPLE	COMMENT
Paul, who knows some logic, argues with Peter. "Either you should take a logic course, or if you should take a logic course, then you should not take a logic course." Peter exclaims, "And talk like Gertrude Stein! If I ever in my life heard an invalid argument, that is one."	This certainly sounds like nonsense. Presumably Paul would explain that all complex sentences in the form of "a; or if a, then b" are necessarily true. Examination shows that, as one side or the other of this alternative must be true, therefore, the alternative is true. If we suppose a to be true, there is not a problem: one side is true. The whole conditional on the right side will be false, in Paul's argument, as it says that a true sentence a implies its contradictory. Now if we suppose a to be false, then the right side is true, for the conditional will simply state that a false sentence implies some other sentence, in the example its contradictory, a true sentence. But every conditional whose antecedent is a false sentence is, as we have seen, necessarily true. If Paul had said, "You should study logic, or at least if you should study logic anything is possible," the nature of the argument might have been clearer to his friend.
Paul tries again, "You should study logic or if you should study logic, then you are able to profit by it." Peter throws up his hands and turns on the radio very loud.	The same tautology - a vacuously true sentence, but nevertheless, true. If it is true that Peter should study logic, then what follows the "or" can be false. If it is false that Peter should study logic, then either he should study it or... , and for the dots we must supply a true sentence. As we just saw, on the hypothesis that "a" is false, "if a, then b" is necessarily true, as any false sentence implies any other sentence, true or false. True then: "If you should study logic (but you shouldn't), then you are able to profit by it" even though you wouldn't learn a thing. Again, suppose Paul had said, "You should study logic, or by heaven, if that's false, then anything else goes in this idiotic world - such as that you could learn something from it." In this form, for some mysterious psychological reason, the argument seems convincing.